

# ALEKSANDRA SPLITT

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## Key words:

behavioral ecology,  
urbanization, solitary bees,  
bee parasites, honey bee,  
*Apis mellifera*, red mason bee,  
*Osmia bicornis*, *Osmia rufa*

## EDUCATIONAL BACKGROUND

<b>2018-2022*</b>	PhD studies at Institute of Nature Conservation, Polish Academy of Sciences  field of study: <b>Biology</b>  „Selected aspects of the red mason bee ( <i>Osmia bicornis</i> ) biology in various environments” supervisor: dr hab. Piotr Skórka, <i>assistant professor</i>  <i>*Including one-year study at Charles University (Prague, Czech Republic) - 2020/2021</i>
<b>2014-2020</b>	PhD studies at University of Life Sciences in Lublin  field of study: <b>Zootechnics (Agriculture)</b>  <i>NOT COMPLETED</i>
<b>2012-2014</b>	Masters at University of Life Sciences in Lublin  field of study: <b>Biology</b> specialization: <b>Forensic Biology</b>
<b>2009-2012</b>	Bachelor at University of Life Sciences in Lublin  field of study: <b>Biology</b> specialization: <b>Applied Biology</b> specialization: <b>Teaching Biology and Chemistry</b>

## EMPLOYMENT

<b>01.03.2020-30.11.2022</b>	<b>Assistant / Junior Researcher</b>	<b>The National Institute of Horticultural Research Apiculture Division in Puławy</b>
<b>01.12.2019-29.02.2020</b>	<b>Engineering and Technical Specialist</b>	<b>The National Institute of Horticultural Research Apiculture Division in Puławy</b>

## GRANTS

- **NAWA – bilateral exchange program**, „KNOW YOUR BEES - in search for research and management similarities of Central and Southern Europe”, University of Belgrade, Serbia, cooperation with: Dr. Ljubiša Stanisavljević, (01.08.2022-30.09.2022)
- **The Kosciuszko Foundation Grants**, “On bees' trail in the urban jungle”, University of California, Davis (USA), cooperation with: prof. Neal Williams, (01.05.2022-31.07.2022)
- **Fulbright Foreign Student Program 2021-2022** – Junior Research Award, „Cross-continent study on pollinating solitary bees along the urbanization gradient”, University of California, Davis (USA), cooperation with: prof. Neal Williams, (01.01.2022-30.04.2022)
- **COLOSS Award for Excellence 2021**, „Data stewardship makes a bee-line for international scientific projects”, (05.07.2021-31.01.2022)
- **NAWA – Iwanowska Programme**, „Participation in the PhD program on Insect biology and conducting research on parasitism in mining bees (*Andrena*)”, cooperation with: Dr Jakub Straka, (01.09.2020-01.09.2021)
- **National Science Centre (NCN)**, PRELUDIUM 17, „Keeping track of solitary red mason bees flight performance using miniaturized system of radio frequency identification (RFID)”, (30.01.2020-29.01.2023)

## **PUBLICATIONS**

1. **Splitt, A.**, Schulz, M., & Skórka, P. (2021). Current state of knowledge on the biology and breeding of the solitary bee—*Osmia bicornis*. *Journal of Apicultural Research*, 1-17.
2. Bieńkowska, M., **Splitt, A.**, Węgrzynowicz, P., & Maciorowski, R. (2021). The buzz changes within time: native *Apis mellifera mellifera* honeybee subspecies less and less popular among Polish beekeepers since 1980. *Agriculture*, 11(7), 652.
3. **Splitt, A.**, Skórka, P., Strachecka, A., Borański, M., & Teper, D. (2021). Keep trees for bees: Pollen collection by *Osmia bicornis* along the urbanization gradient. *Urban Forestry & Urban Greening*, 64, 127250.
4. Skórka, P., Banach, A., Banasiak, M., Bokalska-Rajba, J., Bonk, M., Czachura, P., ... & Zduńczyk, P. (2021). Congruence between the prioritisation of conservation problems at the local and national scale: an evaluation by environmental scientists in Poland. *Environmental Science and Pollution Research*, 28, 35317–35326.
5. Bieńkowska, M., **Łoś, A.**, & Węgrzynowicz, P. (2020). Honey bee queen replacement: An analysis of changes in the preferences of Polish beekeepers through decades. *Insects*, 11(8), 544.
6. Węgrzynowicz, P., & **Łoś, A.** (2020). Dataset of wing venation measurements for *Apis mellifera caucasica*, *A. mellifera carnica* and *A. mellifera mellifera* (Hymenoptera: Apidae), their hybrids and backcrosses. *Biodiversity Data Journal*, 8, e53724.
7. **Łoś, A.**, Skórka, P., Strachecka, A., Winiarczyk, S., Adaszek, Ł., Winiarczyk, M., & Wolski, D. (2020). The associations among the breeding performance of *Osmia bicornis* L.(Hymenoptera: Megachilidae), burden of pathogens and nest parasites along urbanisation gradient. *Science of The Total Environment*, 710, 135520.
8. Schulz, M., **Łoś, A.**, Grzybek, M., Ścibior, R., & Strachecka, A. (2019). Piperine as a new natural supplement with beneficial effects on the life-span and defence system of honeybees. *The Journal of Agricultural Science*, 157(2), 140-149.
9. Strachecka, A., Grzybek, M., Ptaszynska, A. A., **Los, A.**, Chobotow, J., & Rowinski, R. (2019). Comparison of lactate dehydrogenase activity in hive and forager honeybees may indicate delayed onset muscle soreness—preliminary studies. *Biochemistry*, 84(4), 435-440.
10. **Łoś, A.**, Schulz, M., Strachecka, A., & Szabelak, A. (2019). Inhalation poisoning with palytoxin from aquarium coral: case description and safety advice. *Archives of Industrial Hygiene and Toxicology*, 70(1), 14-17.
11. Schulz, M., Ścibior, R., Grzybek, M., **Łoś, A.**, Paleolog, J., & Strachecka, A. (2019). A new case of honeybee *Apis mellifera* infection with bumblebee parasite *Apicystis bombi* (Apicomplexa: Neogregarinorida). *Comparative Parasitology*, 86(1), 65-67.
12. Schulz, M., **Los, A.**, Skowronek, P., & Strachecka, A. (2019). Influence of environmental and anthropogenic agents on the occurrence of coral reef bleaching syndrome and coral diseases. *Veterinary Medicine - Science & Practice*, 75(04), 221-231.
13. **Łoś, A.**, Bieńkowska, M., & Strachecka, A. (2019). Honey bee (*Apis mellifera*) as an alternative model invertebrate organism. *Veterinary Medicine - Science & Practice*, 75(2), 93-106.
14. Strachecka, A. , **Łoś, A.**, Filipczuk, J., & Schulz, M. (2018). Individual and social immune mechanisms of the honey bee. *Veterinary Medicine - Science & Practice*, 74(07), 426-433.
15. **Łoś, A.**, & Strachecka, A. (2018). Fast and cost-effective biochemical spectrophotometric analysis of solution of insect "blood" and body surface elution. *Sensors*, 18(5), 1494.
16. Schulz, M., Ścibior, R., Badurowicz, K., **Łoś, A.**, Bajda, M., Tyszczyk, J., ... & Strachecka, A. J. (2017). Feasibility of preparing nesting box and luring large solitary carpenter bee, *Xylocopa valga*. *Journal of Apicultural Science*, 61(2), 263-267.
17. Strachecka, A., Chobotow, J., Paleolog, J., **Łoś, A.**, Schulz, M., Teper, D., ... & Grzybek, M. (2017). Insights into the biochemical defence and methylation of the solitary bee *Osmia rufa* L: A foundation for examining eusociality development. *PLOS ONE*, 12(4), e0176539.
18. Bajda, M., **Łoś, A.**, Schulz, M., & Kasperek, K. (2016). Mammalian and insect metalloproteases. *Veterinary Medicine - Science & Practice*, 72(7), 408-412.
19. **Łoś, A.**, Kadhim, M. J., & Olszewski, K. (2016). LAMP— a method of isothermal DNA amplification. *Veterinary Medicine - Science & Practice*, 72(1), 22-27.
20. Bajda, M., **Łoś, A.**, & Merska, M. (2014). Effect of amphotericin B on the biochemical markers in the haemolymph of honey bees. *Veterinary Medicine - Science & Practice*, 70(12), 766-769.

## **NATIONAL PATENTS**

**Łoś A.** (30%), Gierasimiuk P. (30%), Strachecka A. (20%), Schulz M. (20%), no. 424549, Date: 2019-12-18, Budka do hodowli pszczół samotnic [eng. A box for breeding solitary bees], University of Life Sciences in Lublin

## **INTERNATIONAL CONFERENCES**

- 1) 13-17.12.**2021**, on-line, 30th International Congress for Conservation Biology
  - a) Is monitoring of solitary bees using radio frequency identification (RFID) feasible? - personal perspective with practical opportunities and obstacles (**presentation**, author of the report: **A. Splitt**)
  - b) Parasites shape life of bees – The example of Stylopized *Andrena* (**poster**, author of the report: **A. Splitt**)
- 2) 21-24.10.**2021**, Warsaw, 35th Annual Meeting of the Scandinavian Association for Pollination Ecology (SCAPE)
  - a) Overview of *Osmia bicornis* pollen choices (**poster**, authors of the report: **A. Splitt, M. Borański, J. Jachula**)
- 3) 18-21.02.**2020**, Puławy, COLOSS: Varroa control & Survivors & RNSBB – Spring workshop
  - a) The honey bee as a model organism (**presentation**, author of the report: **A. Łoś**)
- 4) 25-27.04.**2019**, Cracow, 8th International Conference for Young Researchers „Multidirectional Research in Agriculture, Forestry and Technology”
  - a) Adaptation of *Osmia rufa* bees to transfer pollen (**presentation**, author of the report: **A. Łoś**) [**Award for the best presentation in the "Animal Science" session**]
  - b) Do honey bees suffer from muscle soreness? – preliminary studies (**presentation**, author of the report: **A. Łoś**)
  - c) The effect of cannabis sativa’s extract on glucose and urea contents in honey bee (*Apis mellifera*) organism (**poster**, authors of the report: P. Skowronek, A. Strachecka, **A. Łoś**, M. Schulz, A. Staniszewski)
- 5) 23-25.03.**2019**, Warsaw, Ecology in a Changing World PhD Student Conference 2019
  - a) Fauna accompanying *Osmia rufa* populations (**poster**, author of the report: **A. Łoś**)
- 6) 16–17.04.**2018**, Cracow, 7th International Conference for Young Researchers „Multidirectional Research in Agriculture, Forestry and Technology”
  - a) MALDI TOF MS examination of biological material from *Osmia rufa* nests, (**presentation**, author of the report: **A. Łoś**)
  - b) Proteolytic system activities in the hemolymph of *Apis mellifera* rebel workers, (**presentation**, authors of the report: A. Strachecka, **A. Łoś**)
- 7) 01–03.12.**2017**, Lublin, International Conference of Natural and Medical Sciences: Young Scientists, PhD Students, and Students
  - a) Honey bee – the alternative model organism (**presentation**, author of the report: **A. Łoś**) [**honourable mention**]
- 8) 24–25.04.**2017**, Cracow, 6th International Conference for Young Researchers „Multidirectional Research in Agriculture, Forestry and Technology”
  - a) Honeybees (*Apis mellifera*) live longer after supplementation with piperine in a cage experiment (**presentation**, author of the report: **A. Łoś**)
  - b) Comparison of successful larval development in the brood chambers of red mason bee (*Osmia rufa*) populations in different locations (**presentation**, author of the report: **A. Łoś**)
- 9) 12–16.12.**2016**, Brno (Czech Republic), International Masaryk Conference For Ph.D. Students And Young Researchers
  - a) Microbiological study of *Apis mellifera* drones’ sperm resistance (**presentation**, authors of the report: **A. Łoś**, G. Borsuk)
- 10) 16–17.04.**2016**, Cracow, 5th International Conference for Young Researchers „Multidirectional Research in Agriculture, Forestry and Technology”
  - a) Histological studies of Red Mason Bees' fat body, (**presentation**, author of the report: **A. Łoś**)
  - b) Lifespan of honey bee after berberine supplementation, (**presentation**, author of the report: **A. Łoś**)
- 11) 14–18.12.**2015**, Brno (Czech Republic), International Masaryk Conference For Ph.D. Students And Young Researchers
  - a) Postcopulatory selection mechanisms among spermatozoa of two subspecies of honey bee drones, (**presentation**, authors of the report: **A. Łoś**, G. Borsuk)
- 12) 27–28.04.**2015**, Olsztyn, XLIV International Seminar of Scientific Clubs in Olsztyn
  - a) Building pollinator hotels, (**presentation**, authors of the report: **A. Łoś**, M. Schulz)
- 13) 21–22.03.**2015**, Cracow, IV International Conference for Phd Students „Multidirectional Research In Agriculture and Forestry”
  - a) The possibility of using curcumin in beekeeping, (**presentation**, authors of the report: **A. Łoś**, M. Bajda)
  - b) The level of DNA global methylation of genome at different stages of honey bees (*Apis mellifera*) castes development, (**presentation**, authors of the report: M. Bajda, **A. Łoś**)

## **AWARDS AND SCHOLARSHIPS**

- ❖ Scholarship of the President of the Polish Academy of Sciences for outstanding scientific achievements **2021/2022**
- ❖ COLOSS Award for Excellence **2021**
- ❖ Scientific scholarship awarded by the Mayor of Lublin **2019/2020; 2016/2017**
- ❖ Honorary badge of the University of Life Sciences in Lublin **2014**
- ❖ Diploma of an outstanding graduate of the University of Life Sciences in Lublin **2014**
- ❖ Distinction of the Master thesis: "Age-related changes in the level of global DNA methylation in summer workers and rebels of *Apis mellifera*" **2014**
- ❖ Distinction of the Bachelor thesis: "Qualitative assessment of the methylation of genes responsible for the synthesis of cuticle-related resistance proteins in *Apis mellifera* queens - project work" **2012**

## **COURSES AND TRAININGS**

- 1) **Data Steward** School Program - 2021 Edition, Certificate no. 34/2021/DSS issued on **19.11.2021**, Warsaw
- 2) **CAE** Cambridge exam confirming C1 level at English, **04.2021**
- 3) Participation in the **TopMinds 2021** mentoring and training program, **29.01-18.06.2021**, organized by Fulbright and Top 500 Innovators, Mentor: Anna Ziomkiewicz-Wichary
- 4) **Certified Peer Reviewer** Course ELSEVIER, **07.02.2021**
- 5) **FCE** Cambridge exam confirming B2 level at English, **04.2016**
- 6) Training for people who perform activities related to the use of animals for scientific or educational purposes **28-29.11; 5-6.12; 12-13.12.2015**
- 7) Course "Operation and maintenance of laboratory sterilizers (autoclaves) up to 50 kW" **18-20.06.2013**
- ❖ Courses, trainings and workshops to improve knowledge in the field of scientific development and work in the laboratory as well as in the use and management of publication database resources

## **ORGANIZATIONAL ACTIVITY**

### **I) COMMITTEES MEMBERSHIP**

- Chairwoman of the Council of Doctoral Students' Self-Government of the University of Life Sciences in Lublin **2017/2018**
- Member of the University's Electoral Commission **2016-2020**
- Member of the Council of the Faculty of Biology, Animal Sciences and Bioeconomy **2016-2018**
- Chairwoman of the Election Committee of the Doctoral Student Self-Government of the University of Life Sciences in Lublin **2015/2016**
- Member of the Faculty Doctoral Committee **2017/2018, 2016/2017, 2015/2016**
- Member of the Faculty Scholarship Committee for PhD Students **2017/2018, 2016/2017, 2015/2016, 2014/2015**
- Vice-president of the Electoral Committee of the Doctoral Student Self-Government of the University of Life Sciences in Lublin **2014/2015**
- Member of the Doctoral Student Self-Government Council of the University of Life Sciences in Lublin **2014-2015**
- Member of the Disciplinary Committee for PhD Students **2017-2018, 2014-2015**
- Member of the Commission of Appeal for the Disciplinary Committee for PhD Students **2018/2019**

### **II) CONFERENCE ORGANIZATION**

- Member of the Organizing Committee of the VII Forum of Young Naturalists in Lublin **11.09.2020**
- Member of the Organizing Committee of the VI Forum of Young Naturalists in Lublin and moderator of the English-language plenary session **25.05.2019**
- Chairwoman of the Organizing Committee of the V Forum of Young Naturalists in Lublin **26.05.2018**
- Member of the Organizing Committee of the XV International Seminar of Student Scientific Clubs "Environment-Animal-Product" and the 5th Conference of Doctoral Students, moderator of the Polish and English-language plenary and poster session **17.04.2017**
- Member of the Organizing Committee of 1st International Workshop on Bank Vole Research **11-12.05.2017**

## **SCIENTIFIC SOCIETIES**

- ✓ **since 2017, a member of COLOSS – honey bee research association (Bern, Switzerland)**
- ✓ since 2014, member of the Apicultural Research Association (Warsaw, Poland)
- ✓ since 2014, a member of the Association of Young Scientists (Lublin, Poland)