



# Bee-Research



# Our main goals



## Research

We offer our research facilities and experience in all types of studies into live bees in the laboratory and into honeybee colonies in apiaries.

## Education

We educate people about the essential role of bees in our ecosystem. We organise workshops for beekeepers and young people about bees and their diseases.



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# Education



NAWA Archive/Alicja Szulc

We offer interactive lectures, seminars, workshops, and tutorials about honeybees, wild pollinators and their role in our ecosystem.

We invite students and beekeepers to cooperate:

- as licentiate thesis students
- as MSc thesis students
- as volunteers / interns/ collaborators.



We also organize workshops in the cooperation with an urban artistic apiary located on the roof of Centre for the Meeting of Cultures (CSK) in Lublin.

## Pro-ecological action

Green Week in Lublin: Air, Earth and Water – a walk through elements.



A head of a worker honeybee.

# Research



## Analysis of honey types:

- honey classification, identification and authentication
- physicochemical characteristics and pollen spectrum of honey types
- antibacterial and antifungal properties
- identification of selected biologically active compounds.

## Main achievements

### New therapeutics for the treatment of nosemosis and other bee diseases



#### I. Microbes should match bees' microbiome

Using our probiotic bacterial strains, dedicated to honeybees (Patent PL233794):

- improves the condition of bee colonies
- extends bee lifespan
- inhibits the growth of *Paenibacillus larvae* – the major honeybee pathogen.
- reduces the risk of infection with pathogens, i.e. *Paenibacillus larvae*, *Nosema* spp. and others as *E. coli*
- positively affects digestion and absorption of necessary compounds and microelements
- supports microflora in bees.



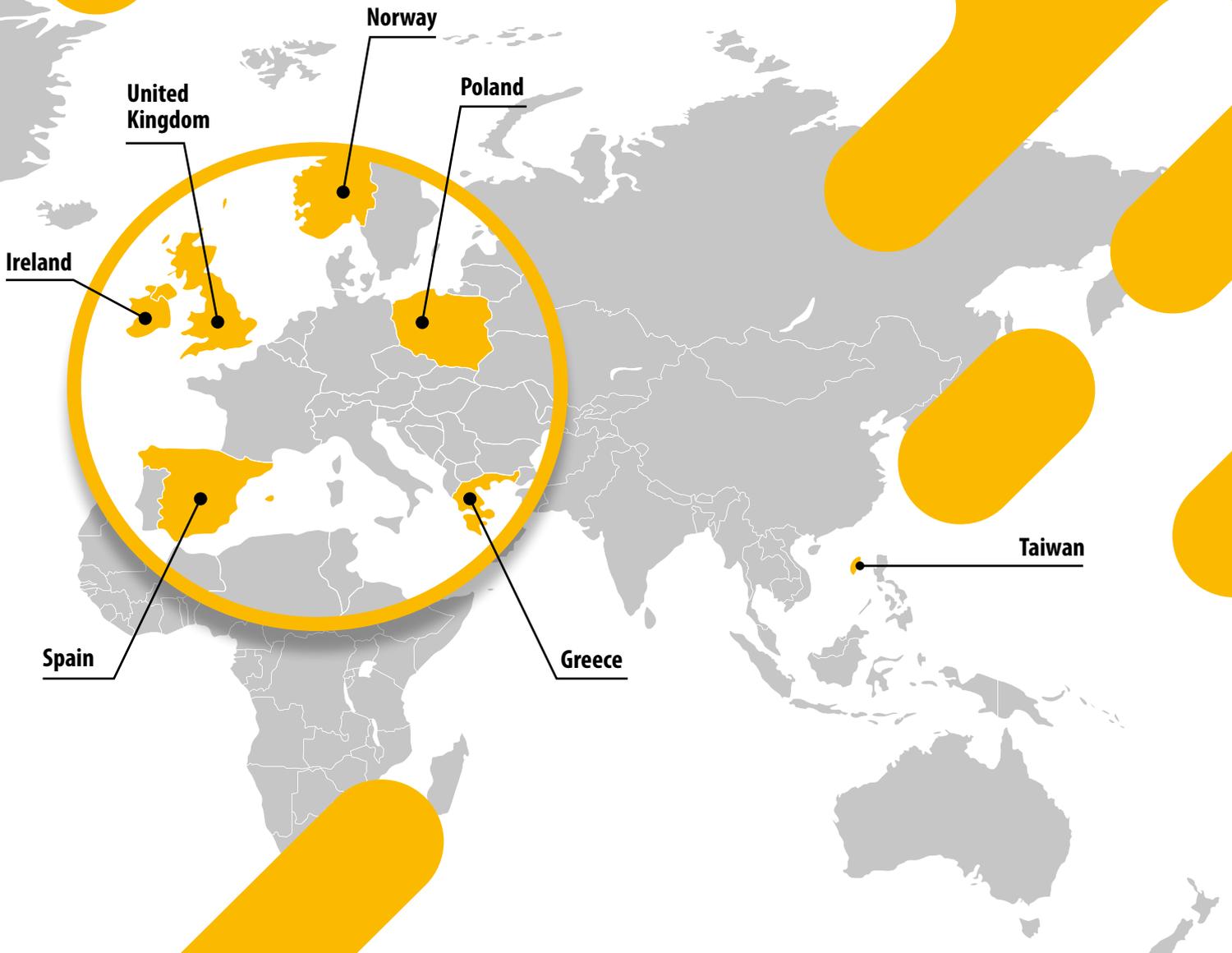
Canada  
(Alberta)

#### II. Eleutherosides benefit honeybees

The main advantages of our preparations based on adaptogenic plant extracts (Patent PL232685):

- natural constituents
- high effectiveness against the *Nosema*-infection
- improved bees' immunity owing to an increase in the activity of phenoloxidase (the enzyme taking part in the bee immune response)
- no side effects.

# Join us!



### III. Porphyrins inactivate *Nosema* spores

Our preparations based on the heterocyclic organic compounds decrease levels of *Nosema*-infection (Nature Scientific Reports 2018; Patent PL231692).



### IV. Cannabinoids protect honeybees from pesticides

Our preparations based on *Cannabis* extracts protect honeybees against the harmful effects of neonicotinoids and prolong honeybee lifespan (Patent applications No. P.433702, P.433703).

# Awards

- **Award of the Polish Minister of Science and Higher Education.**<sup>1</sup>
- **Silver medal awarded on the 70th International Fair “Ideas, Inventions, New Products” iENA<sup>2</sup> in Nuremberg for patent application No. P.415155.**
- **Winner of the 9th national competition “Innovation is a Woman” organised by the Polish Women’s Foundation, aimed at selecting innovative solutions.**
- **International EIFFEL Prize<sup>3</sup> awarded by the French Federation of Inventors at the 117th International Fair of Inventions, CONCOURS LÉPINE 2018 in Paris for patent application No. P.423363.**
- **Gold Medal awarded by World Invention Intellectual Property Associations (WIIPA)<sup>4</sup> at the Euroinvent European Exhibition of Creativity and Invention in Iasi, Romania, for patent application No. P.423363.**





# Everything for **bees**



**Prof. Aneta A. Ptaszyńska**  
**Team Leader**

# Media about us

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● **New drug aims to sting killer bee disease**

Reuters

<https://www.youtube.com/watch?v=zdN72LZSKXo>



● **Science in Poland**

TVP 3 Lublin

<https://lublin.tvp.pl/25836505/18-czerwca-2016>



● **Mikrosporydia – śmiertelne pasożyty**

Lublin University of Inspiration

[https://lui.lublin.eu/portal/lui\\_wyklady/mikrosporydia-smiertelne-pasozyty/](https://lui.lublin.eu/portal/lui_wyklady/mikrosporydia-smiertelne-pasozyty/)



● **Pszczoła miodna a nosemoza**

Lublin University of Inspiration

[https://lui.lublin.eu/portal/lui\\_wyklady/pszczoła-miodna-a-nosemoza/](https://lui.lublin.eu/portal/lui_wyklady/pszczoła-miodna-a-nosemoza/)

## Contact

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**Prof. UMCS Aneta A. Ptaszyńska**

[aneta.ptaszynska@poczta.umcs.lublin.pl](mailto:aneta.ptaszynska@poczta.umcs.lublin.pl)

**Maria Curie-Skłodowska University**

Faculty of Biology and Biotechnology, Institute of Biological Sciences,

Department of Immunobiology

19 Akademicka St., 20-033 Lublin, Poland



**bee-research.umcs.pl**

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**Api Lab UMCS PPI/PZA/2019/1/00039**

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