

Mika Zagrobelny
Forsker
Molecular Aging Program

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Education

2007: Ph.D. from Faculty of Life Science, University of Copenhagen. *Cyanogenesis in Arthropods*.
2002: M.Sc. in biology from University of Copenhagen (Graded 11). *Survey of a family of non-LTR retrotransposons in Caenorhabditiselegans and Caenorhabditis briggsae*.
1996: "Matematiskstudentereksamen" (High school) graduation from Espergærde Gymnasium (Average:10).
1993: "Folkeskolen" 9th grade graduation from Borupgårdskolen, Snekkersten (Average: 10).

Employment

2024-: Researcher at Faculty of Health and Medical Sciences, University of Copenhagen
2022-2023: Teacher at Gammel Hellerup Gymnasium
2021-2022: Teacher at Københavns VUC (KVUC)
2018-2020: Teacher at Hillerød Teknisk Gymnasium (Unord)
2014-2017: Associate Professor at Faculty of Science, University of Copenhagen.
2007-2013: Post Doctoral Fellow at Faculty of Life Science (Now Faculty of Science), University of Copenhagen.
2003: Research assistant at KVL, Copenhagen. (Later Faculty of Life Science, now Faculty of Science, University of Copenhagen) until awarded Ph.D. stipend.

Courses

2024: Analysis of genome-wide enrichment data
2022: 4 hour refresher first aid course
2022: ½-day course about students with ADHD
2019: 1-day mini-pedagogic course for Highschool teachers
2016: 1 day course in Pedagogic supervision
2016: 6 day course in Project Management of Research Projects (Rambøll)
2015: ½ day course in Responsible conduct of Research (RCR)
2015: 3 day course in supervision of Ph.D. students
2012: 1 day course in "Protein Structure Analysis" in Gent, Belgium.
2012: 1 day refresher first aid course
2010: Talent development course at University of Copenhagen.
2009-2010: Higher education teaching course from University of Copenhagen.
2003: 12 hour first aid course

Supervision

2017: Chair of the PhD assessment committee for Pernille Østerbye Erthmann: *Triterpenoid saponin biosynthesis in the non-model crucifer plant Barbarea vulgaris: gene discovery, genome assembly, and transformation*
2016: Main supervisor of bachelor-student (Rojan Demirtas): *How does toxicity vary within Heliconius?*
2016: Supervision of colleague (Irina Pateraki) taking the Higher education teaching course from University of Copenhagen
2015: Main supervisor of 5 project students *Detonation of the cyanide bomb in insects* (9 weeks)
2014-2017: Co-supervisor of two PhD students, Mikael Kryger Jensen: *Engineering soluble insect and plant cytochromes P450 for biochemical characterization* and Érika Cristina Pinheiro de Castro: *The evolution of chemical defenses in passion vine butterflies*.
2013: Co-supervisor of bachelor-student (Ditte Bøgeskov Hansen): *Cyanogenic glucosides in sugarcane*.
2010-2014: Co-supervisor of two PhD students, Stefan Pentzold: *Insect counter-adaptations to plant cyanogenic glucosides*, and Joel Fürstenberg-Hägg: *Interplay between de novo biosynthesis and sequestration of cyanogenic glucosides in Arthropods*.
2010: Co-supervisor of project-student (15 ECTS) Geziel Barbosa Aguilar: *CYP405A2: Characterization of three intronic regions in the Zygaena burnet moth*.
2009: Co-supervisor of project-student (15 ECTS) Laura Martín Mitjana: *Optimization of DNA extraction and cloning of cytochromes P450 in Zygaenidae*.
2007: Co-supervisor for master-student Linea Rigét Alsing: *Cyanogenic glucosides in Zygaena filipendulae*.
2002: Supervisor for a team of students on the project: *Transcriptional activity of Sam, Frodo & Merry retrotransposons in response to heat shock* (6 weeks).

Teaching

- 2024: Medical genetics Course (B.Sc. level): 1 exercise: Chromosomes
2022-2023: Biology B and C (high school)
2021-2022: Biology A, B and C (high school)
2019-2020: Biology B and C, Biotechnology A (high school)
2018-2019: Biology C, Biotechnology A and Technic ("process, levnedsmiddel og sundhed") (high school)
2016-2017: Study practice training of high schoolstudents (2 hour computer-exercise): *Teoretisk computerøvelse i bioinformatik: Virtuelt PCR-forsøg på Rubisco-gen*
2016: Copenhagen Summer University, Bioinformatik – forstå de hyppigst anvendte værktøjer (Highschool teachers): Lectures and exercises indatabase searches, sequence analysis, construction and modification of phylogenetic trees, 3 days. Course responsible and performing all teaching.
2016-2018: Cool climate viticulture and enology (M.Sc. level): 1 lecture: *Grape pest management*
2013+2016: Human benefits from Insects (M.Sc. level): 1 lecture: *Insects as producers of specialized chemical compounds*
2013-2015: Copenhagen Summer University, Biotechnology and Bioinformatics (Highschool teachers): Lectures and exercises in database searches, sequence analysis, construction and modification of phylogenetic trees, 5 days. Responsible for bioinformatics teaching, both lectures and exercises. Course responsible in 2014+2015.
2010-2017: Bioinformatics 1 (B.Sc. level): Exercises in sequence analysis, construction and modification of phylogenetic trees (planning (incl. exam), computer exercises, 1 lecture, oral exams, 4 weeks a year).
2003-2013: Biochemistry 2 (B.Sc. level): Biosynthesis, function and degradation of cyanogenic glycosides (Planning, laboratory exercises and correction of reports, 1 week a year).

Dissemination

- 2018: Invited talk at the symposium "Vin og Videnskab" at the Museum of Natural History, Denmark: *En kemisk-økologisk historie om giftige køllesværmere og deres fødeplanter*
2018: Invited talk at "Lærkeskolen" in Stenløse: *Hvordan bliver man biolog og hvad laver en forsker.*
2016: Invited talk at the Sixth National Moth Recorders' Meeting in Birmingham, UK: *Burnets, cyanide bombs and colonisation*
2015: Invited talk at the Entomological Society Denmark: *En kemisk-økologisk historie om co-evolution mellem køllesværmere og deres værtsplanter*
2014: Filmed talk aimed at high school students and teachers: *Sommerfugle æder gift til forsvaret - Køllesværmeren og kællingetand.* <http://video.ku.dk/video/9974871/sommerfugle-aeder-gift-til-forsvar>
2013: Talk at high school: *Naturstoffer, kemisk krigsførelse og genetik.*
2007-2017: Provided *Zygaena* larvae, boxes, food-plants and information about rearing to the kindergarden "Vandfaldet" and the primary school "Lærkeskolen" in Stenløse.
2006: Visited Max Planck institute for Chemical Ecology in Jena, Germany and gave a talk (2 days).
2003-2010: Culture Night Copenhagen: *Plants that fight back – picky insects* (Laboratory exercises and planning, 1 day a year).
2003-2017: High school visits: *Biotechnology, detection of genes with PCR* (lectures and laboratory exercises, 2 weeks a year) Course responsible since 2009.

Conferences

- 2024: *Generative AI in Science* in Copenhagen, Denmark.
2017: Gordon Research Conference "Plant-Herbivore interactions" in California, USA (poster).
2016: "15th international symposium on Zygaenidae" in Mals, Italy (2 invited talks).
2015: ISCE2015 (31st conference of the International Society of Chemical Ecology) in Stockholm, Sweden (talk and poster).
2015: *Plant-Insect-Microbe Interactions Symposium* in Denmark.
2014: "5th Danish Symposium on Metabolomics" in Denmark.
2014: "14th international symposium on Zygaenidae" on Mull, Scotland (3 invited talks).
2013: Gordon Research Conference "Plant-Herbivore interactions" in California, USA (poster).
2012: "13th international symposium on Zygaenidae" in Innsbruck, Austria (2 invited talks).
2012: "Copenhagenomics2012" in Denmark.
2011: "Sixth International Symposium on Molecular Insect Science" in Amsterdam, Holland (Invited talk and poster).
2010: "12th international symposium on Zygaenidae" in Hatay, Turkey (Invited talk).
2010: Gordon Research Conference "Plant-Herbivore interactions" in Texas, USA (poster).
2010-2017: Yearly conference "Plant Biotech Denmark meeting" in Denmark (poster each year, chair of a session in 2016).
2009: "VI-TH International Conference on Arthropods: Chemical, Physiological, Biotechnological and Environmental Aspects" in Ochotnica Dolna, Poland (Invited talk and chair of a session).
2006: "10th international symposium on Zygaenidae" in Lyon, France (Invited talk).
2006: "22rd Annual Meeting of the International Society of Chemical Ecology ISCE" in Barcelona, Spain (poster).
2004: Gordon Research Conference "Plant-Herbivore interactions" in California, USA (poster).
2001: European Society of Evolutionary Biology (ESEB) conference in Århus, Denmark.

Funding

- 2013: Co-applicant on application to the Villum foundation (Denmark) (30 mill. kr.), Title: *Bioactive Plants II: Plant plasticity*

2013: Co-applicant application for a large project to FNU (The Danish Council for Independent Research, Natural Sciences) (6.5 mill. Kr.), title: Evolution of Chemical Defence in Butterflies and Moths
2007: Co-applicant application to the Carlsberg foundation (150.000 Kr.), title: Which genes are active in the chemical defense of the six-spotted burnet moth?

Main Collaborations

2016-2018: Feyereisen R.: Evolution of chemical defence in insects. Affiliated professor from Institut National de la Recherche Agronomique (INRA), France.
2015-2018: Jensen, AB.: The importance of ingested cyanogenic glucosides for bee health. University of Copenhagen, DK.
2014-2018: Briolat E., Stevens M.: Warning coloration in different life stages of Zygaenid moths, and its role in male-female communication. University of Exeter, UK.
2014-2017: Cryle M.: Crystallization of P450 enzymes from plants and insects involved in the biosynthesis of cyanogenic glucosides. Max Planck Institute, Heidelberg, Germany.
2013-2017: Cardoso MZ.: Occurrence and biosynthesis of cyanogenic glucosides in *Heliconius* butterflies and their food plants. *Botanica, Ecologia e Zoologia*, Centro de Biociencias, Universidade Federal do Rio Grande do Norte, Natal, Brazil.
2011-2013: Feyereisen R.: de novo biosynthesis and sequestration of cyanogenic glucosides in *Z. filipendulae*. Visiting professor from Institut National de la Recherche Agronomique (INRA), France.
2009-2012: Nakonieczny M.¹, Kedzior A.¹, Debinsky DM.², Matter S.³: Occurrence and biosynthesis of hydroxynitrile glucosides in *Parnassius* (Papilionidae) butterflies and their food plants. ¹Department of Animal Physiology & Ecotoxicology, University of Silesia, Poland. ²Ecology, Evolution, and Organismal Biology, Iowa State University, USA. ³Department of Biological Sciences, University of Cincinnati, USA
2006-2009: Dreon AL., Gomiero T., Paoletti MG.: Cyanogenic glucosides in edible insects. Laboratory of Agroecology and Ethnobiology, Padova University, Italy.

Other achievements

2016-2017: Member of the departmental Ph.D. Committee, University of Copenhagen, Denmark
2014-2017: Member of the section Coordination Group, University of Copenhagen, Denmark
2011: Course for members of liaison committees.
2010-2012: Deputy member of the local liaison committee.
2007-2009: Board member in the kindergarten "Blåmejsen" in Stenløse.
1996: Six weeks of voluntary unpaid work for the Australian Trust for Conservation Volunteers (ATCV) in Northern Territory, Australia.