

# CURRICULUM VITAE

## JOANNA ZYPRYCH-WALCZAK



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↻ Date of birth: 31<sup>st</sup> October 1980  
↻ Address: Świerkowa 13  
62-005, Promnice  
Poland  
↻ Telephone: +48 505 793 194  
↻ E-mail: zjoanna@up.poznan.pl

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### EDUCATION

#### ↻ PhD

10.2007–09.2011 **Poznan University of Life Sciences, Department of Mathematical and Statistical Methods, Poznan, Poland** – PhD studies;  
Research on the applications of statistical methods in the gene selection process in microarray experiments;  
Disseration title: "Statistical analysis of microarray data."

#### ↻ MSc

10.2002–06.2007 **Adam Mickiewicz University, Faculty of Mathematics and Computer Science, Poznan, Poland** – master studies;  
Field of study: Mathematics, Specialization: Applied Mathematics;  
MSc thesis: "Analysis of blocks with the neighborhood effects."

09.2004–06.2006 **Heinrich-Heine University in Düsseldorf, Faculty of Mathematics and Natural Sciences, Düsseldorf, Germany** – master studies;  
Field of study: Mathematics – Socrates Erasmus.

09.1999–06.2004 **Poznan University of Technology, Faculty of Engineering Management, Poland** – master of Science studies;  
Field of study: Marketing & Management, Specialization: Personal advice.  
MSc thesis: "Staff recruitment and selection."

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### PROFESSIONAL EXPERIENCE

05.2015–05.2016 **Maternity leave**

11.2012–05.2013 **Maternity leave**

- 10.2011–now **Poznan University of Life Sciences, Department of Mathematical and Statistical Methods, Poznan, Poland** – Assistant (adjunct) professor;  
Research in biostatistics and bioinformatics; development of statistical methods for data analysis based on microarray and next generation sequencing data; statistical consulting for the researchers from the University. Lecturing - Mathematics with elements of algebra and statistics, Information Technologies.
- 02.2011–04.2011 **Funcional Genomic Center Zurich** – visiting researcher;  
Research on the application of statistical methods (mainly hypothesis testing) in the selection of differential genes obtained from microarray and RNA-Seq experiments.
- 06.2010–07.2010 **College of William & Mary, Department of Mathematics, Williamsburg, VA, USA** – Mentor during Research Experience programme for Undergraduate Students;  
Research on mathematics, mainly linear algebra and matrix algebra; work on totally unimodular matrices.
- 09.2010 **Uniformed Services University of the Health Sciences, Department of Preventive Medicine & Biostatistics, Washington, DC, USA** – visiting researcher;  
Research on machine learning algorithms and methods of finding differentially expressed genes.
- 08.2008–09.2008 **University of Technology in Graz, Institute of Genomics and Bioinformatics, Linz** – internship;  
Research on preparation of the experiment and preliminary analysis of microarray data.
- 10.2005–09.2006 **Heinrich-Heine University in Düsseldorf, Faculty of Mathematics and Natural Sciences, Düsseldorf, Germany** – scientific support;  
Course: Analysis I, Analysis II.
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## LANGUAGES

- ↻ Polish – native
- ↻ English – spoken: advanced, written: intermediate
- ↻ German – spoken/written: advanced

## PROGRAMMING SKILLS & SOFTWARE

- ↻ programming – R - advanced, in particular for bioinformatic applications
  - ↻ OS – Linux, Windows - advanced
  - ↻ other – Latex, MS Office
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## PUBLICATIONS

SIATKOWSKI, I., ZYPRYCH-WALCZAK, J., (2018). R w analizie statystycznej dla przyrodników. *Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań, Poland. ISBN 978-83-7160-899-5, ss.121.*

PIEKARSKA-BONIECKA H., ZYPRYCH-WALCZAK J., SIATKOWSKI I., DOLAŃSKA-NIEDBAŁA E., TRZCIŃSKI P., RZAŃSKA-WIECZOREK M., TRAN DINH D., (2018). The Impact of Apple Orchard Edge Plants on Communities of Pimplinae (Hymenoptera, Ichneumonidae). *J. Entomol. Res. Soc.*, 20(2): 43–59.

PIEKARSKA-BONIECKA, H., ZYPRYCH-WALCZAK, J., RZAŃSKA-WIECZOREK, M., TRAN DINH, D., SIATKOWSKI, I., (2018). The number and abundance of ichneumonidae (Hymenoptera, Apocrita) subfamilies occurring in apple orchards and on their edges. *Acta Sci. Pol. Hortorum Cultus*, 17(2), 93–103. DOI: 10.24326/asphc. 2018.2.8.

OBREPAŁSKA-STĘPŁOWSKA A., ZMIENKO A., WRZESIŃSKA B., GORALSKI M., FIGLEROWICZ M., ZYPRYCH-WALCZAK J., SIATKOWSKI I., POSPIESZNY H., (2018). The Defense Response of *Nicotiana benthamiana* to Peanut Stunt Virus Infection in the Presence of Symptom Exacerbating Satellite RNA. *Viruses* 10(9), 449.

LEŚNIEWSKA A., ZYPRYCH-WALCZAK J., SZABELSKA-BERĘSEWICZ A., OKONIEWSKI M. J., (2018). *Genes sharing the protein family domain decrease the performance of classification with RNA-seq genomic signatures.* *Biology Direct*, 13 (1), 3, doi: 10.1186/s13062-018-0205-x.

PIEKARSKA-BONIECKA H., SIATKOWSKI I., ZYPRYCH-WALCZAK J., TRZCIŃSKI P., RZAŃSKA-WIECZOREK M., (2017). *The phenology of occurrence of dominant predatory Syrphidae (Diptera) species in apple orchards and on their edges.* *Acta Sci. Pol. Hortorum Cultus*, 16(1), 23–38.

BERĘSEWICZ M., ALVAREZ A., BIECEK P., DYDERSKI M. K., KOSIŃSKI M., NOWOSAD J., ROTTER K., SZABELSKA-BERĘSEWICZ A., SZYMKOWIAK M., WAWROWSKI L., ZYPRYCH-WALCZAK J., (2017). *Conference Report: European R Users Meeting 2016*. The R Journal, 9 (1), 501-504.

RÓŻAŃSKA-ZAWIEJA J., SZABELSKA-BERĘSEWICZ A., SOBEK Z., NIENARTOWICZ-ZDROJEWSKA A., ZYPRYCH-WALCZAK J., SIATKOWSKI I., (2017). *Wpływ wielkości grup ojcowskich i stad na optymalną ocenę współczynnika odziedziczalności długości ciąży u bydła*. Roczniki Naukowe Polskiego Towarzystwa Zootechnicznego 13(1), 9–17.

SZENAJCH J., GÓRALSKI M., ŚWIERCZ A., SZABELSKA A., ZYPRYCH-WALCZAK J., SYNOWIEC A., SIATKOWSKI I., HANDSCHUH L., (2016). *Zmiany w ekspresji szlaków sygnałowych uczestniczące w wykształcaniu nabytej w obecności erytropoetyny oporności na ci-splatynę i paklitaksel w komórkach ludzkiego raka jajnika*. BioMed Nowotwory, vol. 66, suppl. 2, p. 50.

ZYPRYCH-WALCZAK J., SZABELSKA A., HANDSCHUH L., GORCZAK K., KLAMECKA K., FIGLEROWICZ M., SIATKOWSKI I., (2015). *The impact of normalization methods on RNA-seq data analysis*. BioMed Research International, Article ID 621690; doi: 10.1155/2015/621690.

GORCZAK K., KLAMECKA K., SZABELSKA A., ZYPRYCH-WALCZAK J., SIATKOWSKI I., (2014). *Graphical methods for differential analysis of RNA-Seq data*. Colloquium Biometricum 44, 167-181.

USZCZYŃSKA B., ZYPRYCH-WALCZAK J., HANDSCHUH L., SZABELSKA A., KAZMIERCZAK M., WORONOWICZ W., KOZŁOWSKI P., SIKORSKI M. M., KOMARNICKI M., SIATKOWSKI I., FIGLEROWICZ M., (2013). *Analysis of boutique arrays: A universal method for the selection of the optimal data normalization procedure*. International Journal of Molecular Medicine, 32 (3), 668-684. [IF = 1.957]

TOMKOWIAK A., WEIGT D., BRODA Z., MIKOŁAJCZYK S., SZABELSKA A., ZYPRYCH J., SIATKOWSKI I., (2013). *Analysis of relationship between genetic and phenotypic similarity of alfaalfa mutants inflorescences*. Nauka Przyr. Technol. 7 (3) #34.

TOMKOWIAK A., WEIGT D., SZABELSKA A., ZYPRYCH J., BRODA Z., SIATKOWSKI I. (2012). *Analiza różnicowania genetycznego odmian I klonów koniczyzny białej (Trifolium repens L.) z użyciem markerów RAPD* Nauka Przyr. Technol. t. 6, z. 4, art. 79

SZABELSKA A., ZYPRYCH-WALCZAK J., SIATKOWSKI I., (2012). *Application of linear mixed models in the selection of genes from microarray experiments with repeated measurements*. Colloquium Biometricum 42, 103-109.

OKONIEWSKI M. J., LESNIEWSKA A., SZABELSKA A., ZYPRYCH-WALCZAK J., RYAN

M., WACHTEL M., MORZY T., SCHAEFFER B., SCHLAPBACH R. (2011). *Preferred analysis methods for single genomic regions in RNA sequencing revealed by processing the shape of coverage*. Nucleic Acids Research, doi: 10.1093/nar/gkr1249. [IF = 8.055]

SCHMIDT M., L. HANDSCHUH, ZYPRYCH J., SZABELSKA A., OLEJNIK-SCHMIDT A., SIATKOWSKI I., FIGLEROWICZ M., (2011). *Impact of DNA microarray data transformation on gene expression analysis - comparison of two normalization method*. Acta Biochimica Polonica 58 (4), 573-580. [IF = 1.234]

ZYPRYCH-WALCZAK J., SZABELSKA A., SIATKOWSKI I. (2011). *Application of statistical tests in gene selection problems*. Biometrical Letters, 48 (2), 113-121.

PIEKARSKA-BONIECKA H., SIATKOWSKI I., ZYPRYCH J. (2010). *Model for bionomy of privet sawfly (Macrophya punctumalbum L.) (Hymenoptera, Tenthredinidae)*. Acta Sci. Pol., Hortorum Cultus. - 9 (3), s. 161-166

PIEKARSKA-BONIECKA H., SIATKOWSKI I., ZYPRYCH J. (2010). *Comparison of the collecting of the parasitoids belonging to the Pimplinae subfamily (Hymenoptera, Ichneumonidae)*. Pol. Pismo Entomol. - vol. 79, no. 3, s. 283-290. SIATKOWSKI M., SZABELSKA A., ZYPRYCH J., WERES J., KUJAWA S., (2010). *Growth curve functions in modeling the thin-layer drying of corn*. Inżynieria Rolnicza 6 (124).

THORNTON A., SZABELSKA A., ZYPRYCH J. ET. AL., (2010). *Modelling and Optimization of Algae Growth*. Proceedings of the 72nd European Study Group - Mathematics with Industry, 54-85.

SIATKOWSKI I., GOSZCZURNA T., SZABELSKA A., ZYPRYCH J., (2010). *Coefficients of dissimilarity and similarity with applications*. Colloquium Biometricum 40, p.13-23.

SZABELSKA A., SIATKOWSKI M., GOSZCZURNA T., ZYPRYCH J., (2010). *Comparison of growth models in R*. Nauka Przyroda Technologia 4 (4) #50.

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## CONFERENCES & WORKSHOPS

14.11-15.11.2018 ICCVS Fall Scientific Symposium 2018, Gdańsk;

Szabelska-Beręsewicz A., Zyprych-Walczak J.: Statistical Analysis of RNA-seq Data - Bringing Results to Scientists. - invited speech

20.08-24.08.2018 The International Conference on Trends and Perspectives in Linear Statistical Inference - LinStat'2018, Będlewo k. Poznań;

Szabelska-Beręsewicz A., Okoniewski M., Siatkowski I.: Statistical methods for genes selection based on RNA-seq coverage profiles. - coautor Zyprych-Walczak J., Szabelska-Beręsewicz A., Siatkowski I., Leśniewska A., Okoniewski M.: Effect of gene-gene correlation in RNA-seq data analysis. - poster

08.07-13.07.2018 The 29th International Biometric Conference - IBC2018, Barcelona;

*Szabelska-Beręsewicz A., Zyprych-Walczak J., Siatkowski I., Okoniewski M.: The difficult genes and their impact on RNA-seq data analysis. - coautor*

*17.09-20.09.2018 XV Overall Polish in vitro Culture and Plant Biotechnology Conference: Biotechnological utilization of in vitro culture variability, Rogów.*

*Weigt D., Mikołajczyk S., Niemann J., Tomkowiak A., Kurasiak-Popowska D., Zyprych-Walczak J., Siatkowski I.: The effect of zearalenone on the anther culture of wheat - coautor*

*19.03-22.03.2018 XXVI Szkoła Zimowa Hodowców Bydła, Zakopane.*

*Różańska-Zawieja J., Sobek Z., Winnicki S., Szabelska-Beręsewicz A., Siatkowski I., Zyprych-Walczak J.: Ocena wydajności stada na podstawie częściowych laktacji - coautor.*

*10.09-14.09.2017 The 47th International Biometrical Colloquium, Kiry k. Zakopanego; Szabelska-Beręsewicz A., Zyprych-Walczak J., Siatkowski I.: Implementation of testing the parallelism for four-parameter logistic model in R. - poster*

*22.07-23.07.2017 16th International conference of Critical Assessment of Massive Data Analysis - CAMDA 2017, Praga; Leśniewska A., Szabelska-Beręsewicz A., Zyprych-Walczak J., Okoniewski M.: Analysis of CAMDA RNA-seq data with the knowlegde of protein domains in genes. - coautor*

*24.11.2016 RBioMeSs – R and Bioinformatics/Medical statistics, Warszawa Szabelska-Beręsewicz A. i Zyprych-Walczak J.: Discussion of a biologist with a statistician working with R - how to find useful information in the vastness of biological data. - invited speech*

*12.10-15.10.2016 IV Kongres Onkologii Polskiej, Łódź; Szenajch J., Góralski M., Świercz A., Szabelska A., Zyprych-Walczak J., Synowiec A., Siatkowski I., Handschuh L.: Zmiany w ekspresji szlaków sygnałowych uczestniczące w wykształcaniu nabytej w obecności erytropoetyny oporności na cisplatynę i paklitaksel w komórkach ludzkiego raka jajnika. - coautor*

*12.10-14.10.2016 European R Users Meeting - eRum 2016, Poznań - organizer;*

*21.09-23.09.2016 LXXXI Zjazd Naukowy Polskiego Towarzystwa Zootechnicznego, Warszawa; Różalska-Zawieja J., Szabelska A., Nienartowicz-Zdrojewska A., Sobek Z., Siatkowski I., Zyprych-Walczak J.: Accuracy of the selected linear models applied for estimation of the heritability coefficient in the dairy cattle population. - coautor*

*Różalska-Zawieja J., Szabelska A., Nienartowicz-Zdrojewska A., Sobek Z., Siatkowski I., Zyprych-Walczak J.: Herds influence of the heritability of pregnancy length in the dairy cattle population. - coautor*

*Różalska-Zawieja J., Szabelska A., Nienartowicz-Zdrojewska A., Sobek Z., Siatkowski I., Zyprych-Walczak J.: Influence of the paternity group size of the heritability of pregnancy length in dairy cattle population. - coautor*

*05.09-07.09.2016 The 46th International Biometrical Colloquium, Lublin; Siatkowski I., Szabelska A., Zyprych-Walczak J.: Statistical methods for survival data analysis. - poster*



- 16.06–18.06.2016 *BioInformatics in Torun 2016 - BIT16, Toruń;*  
Szabelska A., Zyprych-Walczak J., Siatkowski I., Okoniewski M.: Influence of the primary analysis on discovering differentially expressed genes based on RNA-Seq data. (poster)
- 07.09–09.09.2015 *The 45th International Biometrical Colloquium, Dymaczewo 2015;*  
Zyprych-Walczak J., Szabelska A., Handschuh L., Górczak K., Klamecka K., Figlerowicz M. and Siatkowski I.: The comparison of the normalization methods for RNA-Seq data analysis. (presentation)
- 30.11–05.12.2014 *XL Konferencja Statystyka Matematyczna, Będlewo;*  
Zyprych-Walczak J., Szabelska A., Siatkowski I.: Przegląd problemów i metod związanych z analizą danych dotyczących ekspresji genów na podstawie eksperymentu głębokiego sekwencjonowania. (co-author)
- 15.10–17.10.2014 *Polish Academic R Users Meeting - PAZUR 2014, Poznań;*  
Szabelska A., Zyprych-Walczak J.: Introduction to R (workshop lecturer)  
Szabelska A., Zyprych-Walczak J.: Usage of R in the analysis of RNA-seq data (presentation)
- 30.06–4.07.2014 *X Working Seminar on Statistical Methods in Variety Testing, Bedlewo;*  
Górczak K., Klamecka K., Szabelska A., Zyprych-Walczak J., Siatkowski I.: RNA-Seq plant data analysis (co-author)
- 21.05.2014 *Open lectures in statistics, UAM Poznań;*  
Zyprych-Walczak J., Szabelska A., Klamecka K., Górczak K., Siatkowski I.: Statistical analysis of data coming from microarray and next generation sequencing experiments (presentation)
- 26.11.2013 *Seminar of the Bioinformatics Group, BOKU University, Vienna;*  
Szabelska A., Zyprych-Walczak J., Siatkowski I.: Microarrays vs RNA-seq - novel approaches for searching interesting genes (invited talk)
- 18.04–20.04.2012 *Congress of Polish Statistics, Poznań;*  
Zyprych-Walczak J., Szabelska A., Siatkowski I.: Metody selekcji genów uwzględniające korelacje pomiędzy genami (presentation)
- 8.12–9.12.2011 *European Bioconductor Developers' Meeting 2011, Manchester;*  
Okoniewski M. J., Lesniewska A., Szabelska A., Zyprych-Walczak J.: Measures of dissimilarity of the coverage functions (co-author)
- 5.09–08.09.2011 *XLI International Biometricum Colloquium, Lublin;*  
Szabelska A., Zyprych-Walczak J., Siatkowski I.: Wykorzystanie liniowego modelu mieszanego w problemie selekcji genów (presentation)
- 29.08–3.09.2010 *XL International Biometrical Colloquium and Second Polish-Portuguese Workshop on Biometry in honour of Prof. J.T. Mexia, Bedlewo;*  
Zyprych J., Szabelska A., Siatkowski I.: Gene's selection based on statistical tests. (poster)  
Szabelska A., Siatkowski M., Goszczurna T., Zyprych J.: Overview of growth models in R (poster)

*Weigt D., Szabelska A., Zyprych J., Siatkowski I., Broda Z.: Morfological analysis of inflorescence mutants in alfalfa (Medicago sativa L.sl.) with the respect to seed yield traits (poster)*

*Tomkowiak A., Szabelska A., Zyprych J., Broda Z., Siatkowski I.: Analiza zroznicowania genetycznego odmian i klonow koniczyny bialej (Trifolium Repens L.) przy uzyciu markerow molekularnych (poster)*

*25.01–29.01.2010 30th International Study Group Mathematics with Industry 2010, Amsterdam;*

*Thornton A., Szabelska A., Zyprych J. et. al. (2010) Modeling and optimization of algae growth. Proceedings of the 72nd European Study Group - Mathematics with Industry, 54-85. (co-author)*

*12.09–15.09.2010 III Polski Kongres Genetyki, Lublin;*

*Weigt D., Tomkowiak A., Szabelska A., Zyprych J., Broda Z., Siatkowski I.: Analiza związku pomiędzy podobieństwem genetycznym i fenotypowym mutantów lucerny - coautor*

*7.12–11.12.2009 Statystyka Matematyczna – WISLA'09, Wisla;*

*Siatkowski I., Szabelska A., Zyprych J.: Statistical tests for gene selection (co-author)*

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## ORGANIZATION ACTIVITIES

*12.10–14.10.2016 Member of the Organizing Committee of European R Users Meeting - eRum 2016, Poznan*

*15.10–17.10.2014 Member of the Organizing Committee of Polish Academic R Users Meeting - PAZUR 2014, Poznan*

*since 2012 Co-organizer of the series of Poznan Academic Meeting of R Users - PAZUR, Poznan*

*29.08–3.09.2010 Co-organizer of XL International Biometrical Colloquium, Bedlewo*

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## REFERENCES

*Available upon request. Referees are the current and former work supervisors:*

☞ *Prof. Idzi Siatkowski*

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## HOBBYS

☞ *baking bread, playing guitar*

☞ *traveling*