

# Ewa Agata Czyż

University of Wisconsin-Madison, Forest & Wildlife Ecology  
1630 Linden Drive, Madison, WI 53706

Email: [eczyz@wisc.edu](mailto:eczyz@wisc.edu)  
Phone: +1 (608) 395-4544

## EDUCATION

---

- 10.2018 – 04.2023      **University of Zurich, Switzerland. PhD in Remote Sensing**  
Remote Sensing Laboratories, The Department of Geography  
PhD thesis: *Remotely sensing ecological genomics.*  
Supervisors: Michael E. Schaepman, Meredith C. Schuman  
Influential Instructor: Bernhard Schmid
- 09.2016 – 10.2018      **University of Zurich, Switzerland. Specialized MSc in Remote Sensing**  
Remote Sensing Laboratories, The Department of Geography  
MSc thesis: *Detecting intraspecific genetic variation in the Laegern temperate forest using airborne imaging spectroscopy time series.*  
Supervisors: Hendrik Wulf, Carla Guillén Escribà. Co-supervisor: Michael E. Schaepman
- 09.2011 – 06.2015      **University of Warsaw, Poland. BSc in Environmental Protection**  
The Department of Biology  
BSc thesis: *Impact of the open pit mine on area of Irian Jaya glaciers, New Guinea in 1980-2015 period.*  
Supervisor: Aleksandra Skłodowska
- 09.2011 – 06.2014      **University of Warsaw, Poland. BSc in Geography**  
The Department of Geography  
BSc thesis: *Geoecological impact on the range of *Metrosideros umbellata*.*  
Supervisor: Wojciech Lewandowski
- 09.2008 – 09.2011      **Liceum Ogólnokształcące Towarzystwa Ewangelickiego, Cieszyn, Poland. Matura**  
Profile: Science  
Basic level: Polish; Advanced level: English, Geography, Mathematics, Biology

## EXPERIENCE

---

- 01.2024 – present      **University of Wisconsin-Madison, USA. Postdoctoral researcher**  
Forest & Wildlife Ecology, College of Agriculture & Life Sciences
- 05.2023 – 09.2023      **University of Zurich, Switzerland. Research Assistant**  
Remote Sensing Laboratories, The Department of Geography
- 01.2021 – present      Member of NSF Biology Integration Institute (BII) on Advancing Spectral biology in Changing ENvironments to understand Diversity (ASCEND)
- 10.2018 – present      Member of University Research Priority Program on Global Change and Biodiversity, (URPP GCB), University of Zurich, Switzerland

05.2019 – 07.2021	Team effort in field campaigns with focus on spectral measurements: <i>N. attenuata</i> sampling (USA, 05-06.2019), Massane forest <i>F. sylvatica</i> sampling (France, 07.2019), <i>F. sylvatica</i> sampling (Switzerland, 07.2019), <i>F. sylvatica</i> sampling (Europe, 07-10.2020), ground measurements for CHIME-SBG Airborne AVIRIS-NG Flight Campaign (Europe, 06-07.2021)
11.2018 – 03.2019	<b>NASA Jet Propulsion Laboratory, Pasadena, USA. Student visit within Visiting Student Researcher Program (JVSRP)</b> The Instruments & Sensors Division, close collaboration with the Science Division Topic: <i>Dimensionality of a hyperspectral signal across sensors, biomes, and phylogenetic groups.</i>
07.2017 – 10.2018	<b>University of Zurich, Switzerland. Research Assistant</b> Remote Sensing Laboratories, The Department of Geography
03.2015 – 04.2015	<b>The University Centre in Svalbard, Norway, MSc course</b> Course: <i>Remote Sensing of the Cryosphere</i>
07.2014 – 12.2014	<b>The University Centre in Svalbard, Norway, BSc course</b> Course: <i>Arctic Terrestrial and Marine Biology</i>
05.2015 – 2019	Working on a project <i>Poa annua</i> in the Antarctic, University of Warsaw, Poland
07 – 08.2014	Volunteering work at ZOO, Warsaw, Poland
01.2012 – 11.2015	Member in scientific clubs at University of Warsaw, Poland <i>Students of Geography</i> <i>Students of Environmental Protection</i>

## TEACHING AND OUTREACH

---

2018 – 2022	Small group teaching, University of Zurich
07.2018 – 06.2022	Co-supervision of BSc thesis of Nemish Murawat
2018 – 2022	Co-examiner of MSc exams, University of Zurich
22-30.05.2021	Contribution to the Science and Nature Festival, Zurich, Switzerland
09.2019	Teaching at Mount Valley School, Bhaktapur, Nepal
09.2020	Contribution to Scientifica, Zurich, Switzerland

## GRADUATE COURSES AND TRAINING

---

- Introduction to ScienceCloud. UZH, Zurich, Switzerland
- Introduction to ScienceCluster. UZH, Zurich, Switzerland
- Optics and Photonics. 227-0125-00L, ETH Zurich, Zurich, Switzerland
- Genetic Variation Analysis. BIO 694, UZH, Zurich, Switzerland
- Concepts in Evolutionary Biology. BIO 395, UZH, Zurich, Switzerland

- Genomics of Environmental Adaptation. 701-1676-01L, ETH Zurich, Switzerland
- DART training. CESBIO, Toulouse, France
- Biomedical Imaging and Scientific Visualization. BIO 219, UZH, Zurich, Switzerland
- Art and science collaborations: Gaining a transdisciplinary toolkit. UZH, Zurich, Switzerland
- Introduction to Science Busking – A Gateway to Effective, Enjoyable Communication with the Public. ECO 380, UZH, Zurich, Switzerland
- Black Forest Summer School: Plant Ecological Epigenetics. Virtual
- EO4Alps summer school. Salzburg, Austria

## PUBLICATIONS AND CONFERENCE CONTRIBUTIONS

---

### *Publications*

Li, C., Czyż, E.A., Halitschke, R., Baldwin, I.T., Schaepman, M.E. and Schuman, M.C., (2023). Evaluating potential of leaf reflectance spectra to monitor plant genetic variation in nature. *Plant Methods*, 19, 108.

Czyż, E. A., Schmid, B., Hueni, A., Eppinga, M. B., Schuman, M. C., Schneider, F. D., Guillén Escribà, C. & Schaepman, M. E. (2023). Genetic constraints on temporal variation of airborne reflectance spectra and their uncertainties over a temperate forest. *Remote Sensing of Environment*, 284, 113338.

Petibon, F., Czyż, E. A., Ghielmetti, G., Hueni, A., Kneubühler, M., Schaepman, M. E., & Schuman, M. C. (2021). Uncertainties in measurements of leaf optical properties are small compared to the biological variation within and between individuals of European beech. *Remote Sensing of Environment*, 264, 112601.

Czyż, E. A., Guillén Escribà, C., Wulf, H., Tedder, A., Schuman, M. C., Schneider, F. D., & Schaepman, M. E. (2020). Intraspecific genetic variation of a *Fagus sylvatica* population in a temperate forest derived from airborne imaging spectroscopy time series. *Ecology and evolution*, 10(14), 7419-7430.

Galera, H., Rudak, A., Czyż, E. A., Chwedorzewska, K. J., Znój, A., & Wódkiewicz, M. (2019). The role of the soil seed store in the survival of an invasive population of *Poa annua* at Point Thomas Oasis, King George Island, maritime Antarctica. *Global Ecology and Conservation*, 19, e00679.

Galera, H., Wódkiewicz, M., Czyż, E., Łapiński, S., Kowalska, M. E., Pasik, M., ... & Chwedorzewska, K. J. (2017). First step to eradication of *Poa annua* L. from Point Thomas Oasis (King George Island, South Shetlands, Antarctica). *Polar Biology*, 40(4), 939-945.

### *To be published*

Czyż, E. A., Schmid, B., Eppinga, M. B., de La Harpe, M., Moradi, A., Li, C., Schaepman, M.E., Schuman, M.C. (submitted) Inferring genetic structure of European beech from observations of spectral phenotypes.

### *Conference Talks*

Czyż, E. A., Schuman, M.C., Schmid, B., Li C., de La Harpe, M., Moradi, A., Schaepman, M.E. Potential for remote observation of *Fagus sylvatica* genetic structure across its natural range. *British Ecological Society. 18-21 December 2022. Edinburgh, UK.*

Czyż, E. A., Schmid, B., Hueni, A., Eppinga, M. B., Schuman, M. C., Schneider, F. D., Guillén Escribà, C. & Schaepman, M. E. Multitemporal airborne reflectance spectra

constrained by intraspecific genetic diversity of a temperate forest. *Swiss Geoscience Day*. 19 November 2022. Lausanne, Switzerland.

Czyż, E. A., Schuman, M.C., Schmid, B., Li C., de La Harpe, M., Schaepman, M.E. Intraspecific variation in leaf reflectance explained by abiotic environment and genetic structure. *ForestSat*. 29 August – 03 September 2022. Berlin, Germany. (invited abstract)

Czyż, E. A., Schmid, B., Hueni, A. Schuman, M. C., Li C., de La Harpe, M., Moradi, A., & Schaepman, M. E. Deriving genetic diversity from hand-held, airborne and spaceborne imaging spectroscopy systems. *EARSel Imaging Spectroscopy Workshop*. 22-24 June 2022. Potsdam, Germany.

Czyż, E. A., Schmid, B., Hueni, A. Schuman, M. C., Li C., de La Harpe, M., Moradi, A., & Schaepman, M. E. Deriving genetic diversity from hand-held, airborne and spaceborne imaging spectroscopy systems. *World Biodiversity Forum*. 26 June – 01 July 2022. Davos, Switzerland.

Czyż, E. A., Schmid, B., Hueni, A., Schuman, M. C., C. & Schaepman, M. E. Deriving genetic diversity from hand-held, airborne and spaceborne imaging spectroscopy systems. *DESI Workshop*. 03– 07 September 2021. Virtual. (invited abstract)

Czyż, E. A., Schmid, B., Hueni, A., Eppinga, M. B., Schuman, M. C., Schneider, F. D., Guillén Escribà, C. & Schaepman, M. E. Genetically constrained temporal trajectories of temperate forest airborne reflectance spectra. *IGARS, AAAS*. 10 – 15 July 2020. Virtual.

Czyż, E. A. Impact of the open pit mine on area of Irian Jaya glaciers, New Guinea. *GIS in Environmental Engineering*. 18 Mai 2016. Krakow, Poland.

#### Conference Posters

Czyż, E. A., Schmid, B., Hueni, A., Schuman, M. C., Guillén Escribà, C. & Schaepman, M. E. Genetic structure of a temperate forest inferred from temporal trade-offs derived from airborne imaging spectroscopy. *105th Annual Meeting of the Ecological Society of America*. 03 – 09 August 2020. Virtual.

Czyż, E. A., Schmid, B., Schaepman, M. E. Genetic structure of *Fagus sylvatica* derived from multi-annual and multi-seasonal airborne spectroscopy. *World Biodiversity Forum*. 20 – 26 February 2020. Davos, Switzerland.

Czyż, E. A., Guillén Escribà, C., Wulf, H., Tedder, A., Schuman, M. C., Schneider, F. D., & Schaepman, M. E. Intraspecific genetic variation of *Fagus sylvatica* derived from airborne imaging spectroscopy time series data. *103rd Annual Meeting of the Ecological Society of America*. 05 – 09 August 2018. New Orleans. USA.

#### OTHER

---

*Languages*

Polish (native), English (fluent, academic level), German (conversational)