

## Sofia Mazzoleni, MSc

**Date of birth:** 3rd March 1992

**Place of birth:** Genova (Italy)

**Nationality:** Italian

**Address:** Department of Ecology, Faculty of Science, Charles University, Viničná 7, 12844, Prague.

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### Education

**October 2016 - ongoing:** PhD study

PhD student in Ecology at the Department of Ecology, Faculty of Science, Charles University, Prague (Czech Republic).

Thesis: "Evolution of sex chromosomes in reptiles"

**November 2013- December 2015:** Master's degree

Master's degree in Biodiversity and Evolution at the University of Bologna (Italy).

Thesis: "Mapping of Interstitial Telomeric Sequences (ITS) in Platyrrhini (Primates) by Fluorescence *in situ* hybridization".

**Final grade:** 110/110 summa cum laude.

**October 2010 - October 2013:** Bachelor's degree

Bachelor's degree in Biological sciences at the University of Genova (Italy)

**Final grade:** 110/110

### Previous positions

**January 2016 - July 2016:** Volunteer researcher

Research volunteering at the Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo (Italy).

**March 2015 - November 2015:** Training

Training for master thesis at the Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo (Italy), in cytogenetics of Primates.

### Grants

**As P.I.**

**2017 - 2019:**

"Molecular differentiation of sex chromosomes and karyotype evolution in chelid turtles (Testudines: Chelidae)", financed by Charles University Grant Agency (GAUK), program code č. 444217. Guarantor: Michail Rovatsos, PhD (budget 750.000 czk).

**As Team member:**

**2019-2021:**

"Evolution of karyotypes and sex chromosomes in the cryptodiran turtles", financed by Charles University Grant Agency (GAUK), program code č. 1191619. Principal investigator: MSc. Lorenzo Clemente, Guarantor: Michail Rovatsos, PhD.

### **2019-2021:**

"When the half could be equal to the whole: Evolution of dosage compensation in squamate reptiles", financed by Czech Science Foundation (GAČR), program code 19-19672S. Principal investigator: Michail Rovatsos, PhD.

### **2017-2019:**

"Evolution of sex chromosomes in toxicoferan reptiles", financed by Czech Science Foundation (GAČR), program code 17-22141Y. Principal investigator: Michail Rovatsos, PhD.

### **2017-2019:**

"Molecular differentiation of sex chromosomes in amniotes", financed by Charles University, program code PRIMUS/SCI/46. Principal investigator: Michail Rovatsos, PhD.

## **Awards**

**2020:** full scholarship to attend the 9th World Congress of Herpetology

Full funded scholarship (c. 1500 euro/3000 NZD) to participate at the World Congress of Herpetology, 5<sup>th</sup>-10<sup>th</sup> January 2020, Dunedin, New Zealand and present my work “**Mazzoleni S**, Augstenová B, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Sex is determined by XX/XY sex chromosomes in Australasian side-necked turtles (Testudines: Chelidae).” (oral)

## **Scientific contribution**

### **Publication activities**

- ❖ co-author of **13** original investigations. For detailed publication list, please see below.
- ❖ co-author of **21** contributions at scientific conferences.
- ❖ my original investigations have been cited **63** times (**H-index 4**) according to Google scholar.

**Google scholar** (<https://scholar.google.com/citations?user=ucrB9SMMAAAJ&hl=it&oi=ao>)

**ORCID** (<https://orcid.org/0000-0001-9554-9984>)

**Research gate** ([https://www.researchgate.net/profile/Sofia\\_Mazzoleni/research](https://www.researchgate.net/profile/Sofia_Mazzoleni/research))

**Scopus** (<https://www.scopus.com/authid/detail.uri?authorId=57194058240>)

**Web of Science** (<https://publons.com/researcher/2179439/sofia-mazzoleni>)

### **International research experience**

**From 2016 – present:** several short visits to scientific laboratories (University of Jaen, Spain) and to museums, institutions, zoos for samples collections (Germany and Austria).

### **Techniques mastered**

**Cytogenetics:** cell cultures preparation and harvesting; classical cytogenetics (whole chromosomes staining, karyotyping, C-banding); molecular cytogenetics (probe preparation; Fluorescence in situ hybridization; Comparative Genome hybridization)

**Molecular:** DNA and RNA isolation; PCR; qPCR; nick translation.

**Bioinformatics:** primer design; mitogenome assembly (Geneious); phylogenetic reconstruction (Mesquite; FigTree); species barcoding (Bioedit; Sequencher). Basic knowledges of Unix and Linux (courses).

### Publications record

1. Scardino R, **Mazzoleni S**, Rovatsos M, Vecchioni L, Dumas F. **2020**. Molecular cytogenetic characterization of the Sicilian endemic pond turtle *Emys trinacris* and the yellow-bellied slider *Trachemys scripta scripta* (Testudines, Emydidae). *Genes*, 11: 702. [IF=3.331]
2. Clemente L, **Mazzoleni S**, Pensabene Bellavia E, Augstenová B, Auer M, Praschag P, Protiva T, Velenský P, Wagner P, Fritz U, Kratochvíl L, Rovatsos M. **2020**. Interstitial telomeric repeats are rare in turtles. *Genes*, 11: 657. [IF=3.331]
3. Suwala G, Altmanová M, **Mazzoleni S**, Karameta E, Pafilis P, Kratochvíl L, Rovatsos, M. **2020**. Evolutionary variability of W-linked repetitive content in lacertid lizards. *Genes*, 11: 531. [IF=3.331]
4. **Mazzoleni S**, Augstenová B, Clemente L, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos, M. **2020**. Sex is determined by XX/XY sex chromosomes in Australasian side-necked turtles (Testudines: Chelidae). *Scientific Reports*, 10: 1-11. [I.F. = 4.011]
5. Rovatsos M, Altmanová M, Augstenová B, **Mazzoleni S**, Velenský P, Kratochvíl L. 2019. ZZ/ZW sex determination with multiple neo-sex chromosomes is common in Madagascan chameleons of the genus *Furcifer* (Reptilia: Chamaeleonidae). *Genes*, 10: 1020. [IF=3.331]
6. Augstenová B, **Mazzoleni S**, Kostmann A, Altmanová M, Frynta D, Kratochvíl L, Rovatsos M. **2019**. Cytogenetic analysis did not reveal differentiated sex chromosomes in ten species of boas and pythons (Reptilia: Serpentes). *Genes*, 10: 934. [IF=3.331]
7. Milioto V, Vlah S, **Mazzoleni S**, Rovatsos M, Dumas F. **2019**. Chromosomal localization of 18S-28S rDNA and (TTAGGG)<sub>n</sub> sequences in two South African dormice of the genus *Graphiurus* (Rodentia: Gliridae). *Cytogenetic and Genome Research*, 158: 145-151. [I.F.=0.96]
8. **Mazzoleni S**, Augstenová B, Clemente L, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. **2019**. Turtles of the genera *Geoemyda* and *Pangshura* (Testudines: Geoemydidae) lack differentiated sex chromosomes: the end of a 40-year error cascade for *Pangshura*. *PeerJ*, 7: e6241. [IF = 2.353]
9. Schmid M, Steinlein C, Reiter AM, Rovatsos M, Altmanová M, **Mazzoleni S**, Johnson Pokorná M, Kratochvíl L. **2019**. 5-Methylcytosine-Rich heterochromatin in reptiles. *Cytogenetic and Genome Research*, 157: 53-64. [I.F. = 0.96]
10. **Mazzoleni S**, Rovatsos M, Schillaci O, Dumas F. **2018**. Evolutionary insight on localization of 18S, 28S rDNA genes on homologous chromosomes in Primates genomes. *Comparative Cytogenetics*, 12: 27. [I.F = 0.97]

11. Augstenová B, **Mazzoleni S**, Kratochvíl L, Rovatsos M. **2018**. Evolutionary dynamics of the W chromosome in caenophidian snakes. *Genes*, 9: 5. [IF = 3.600]
12. **Mazzoleni S**, Schillaci O, Sineo L, Dumas F. **2017**. Distribution of interstitial telomeric sequences in primates and the pygmy tree shrew (Scandentia). *Cytogenetic and Genome Research*, 151: 141-150. [I.F. = 1.42]
13. Dumas F, **Mazzoleni S**. **2017**. Neotropical primate evolution and phylogenetic reconstruction using chromosomal data. *The European Zoological Journal*, 84: 1-18. [I.F. = 0.66]

#### Presentations at conferences

1. **Mazzoleni S**, Augstenová B, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Sex is determined by XX/XY sex chromosomes in Australasian side-necked turtles (Testudines: Chelidae). World Congress of Herpetology **2020**, in Dunedin, New Zealand. (oral)
2. **Mazzoleni S**, Mrugala A, Vasileiadou K, Gomes Sotero-Caio C, Augstenová B, Clemente L, Velenský P, Auer M, Fritz U, Kratochvíl L, Rovatsos M. When the species name is not a reproductive barrier: cases of interspecific hybridization in turtles. Zoologické dny **2020**, Olomouc, Czech Republic. (poster)
3. Suwala G, Altmanová M, **Mazzoleni S**, Augstenová B, Kratochvíl L, Rovatsos M. Evolutionary variability of W-linked content in lacertid lizards. Zoologické dny **2020**, Olomouc, Czech Republic. (oral)
4. Rovatsos M, Altmanová M, Mazzoleni S, Augstenová B, Velenský P, Vences M, Glaw F, Sanchez A, Kratochvíl L. ZZ/ZW sex determination with multiple neo-sex chromosomes is common in Madagascan chameleons of the genus *Furcifer* (Reptilia: Chamaeleonidae). Zoologické dny **2020**, Olomouc, Czech Republic. (oral)
5. **Mazzoleni S**, Mrugala A, Vasileiadou K, Gomes Sotero-Caio C, Augstenová B, Clemente L, Velenský P, Auer M, Fritz U, Kratochvíl L, Rovatsos M. When the species name is not a reproductive barrier: cases of interspecific hybridization in turtles. The **2019** European Congress of Evolutionary Biology (ESEB), in Turku, Finland. (poster)
6. Augstenová B, **Mazzoleni S**, Altmanová M, Frynta D, Kratochvíl L, Rovatsos M. Evolution of sex chromosomes in boas and pythons: a molecular-cytogenetic perspective. The **2019** European Congress of Evolutionary Biology (ESEB), in Turku, Finland. (poster)
7. **Mazzoleni S**, Augstenová B, Clemente L, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Turtles of the genera *Geoemyda* and *Pangshura* (Testudines: Geoemydidae) lack differentiated sex chromosomes: the end of a 40-year error cascade for *Pangshura*. Zoologické dny **2019**, Brno, Czech Republic. (oral)
8. Clemente L, **Mazzoleni S**, Pensabene E, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Rarity of interstitial telomeric repeats confirms karyotype conservation in cryptodiran turtles. Zoologické dny **2019**, Brno, Czech Republic. (poster)

9. Augstenová B, **Mazzoleni S**, Johnson Pokorná M, Altmanová M, Frynta D, Rovatsos M, Kratochvíl L. Sex chromosomes in snakes: from ZW to XY and back. Zoologické dny **2019**, Brno, Czech Republic. (oral)
10. **Mazzoleni S**, Augstenová B, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Sex determination in Australasian side-necked turtles (Testudines: Chelidae). 22nd International Chromosome Conference (ICC) **2018**, Prague, Czech Republic. (poster)
11. **Mazzoleni S**, Augstenová B, Clemente L, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Cytogenetics of the turtles of the genera *Geoemyda*, *Hardella* and *Pangshura* (Testudines: Geoemydidae). 22nd International Cytogenetic Conference (ICC) **2018**, Prague, Czech Republic. (poster)
12. Augstenová B, **Mazzoleni S**, Kratochvíl L, Rovatsos M. Evolutionary dynamics of the W chromosome in caenophidian snakes. 22nd International Cytogenetic Conference (ICC) **2018**, Prague, Czech Republic. (poster)
13. Rovatsos M, Altmanová M, Johnson Pokorná, Velenský P, Sánchez A, **Mazzoleni S**, Augstenová B, Kratochvíl L. Sex chromosome and karyotype evolution in chameleons (Iguania: Chamaeleonidae). 22nd International Cytogenetic Conference (ICC) **2018**, Prague, Czech Republic. (poster)
14. Vlah S, Milioto V, **Mazzoleni S**, Rovatsos M, Dumas F. Genomic organization of repetitive DNAs in *Graphiurus* (Rodents) through classical and molecular cytogenetics. 22nd International Cytogenetic Conference (ICC) 2018, Prague, Czech Republic. (poster)
15. **Mazzoleni S**, Augstenová B, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Evolution of sex chromosome in the Australasian side-neck turtles (Testudines: Chelidae): insights from cytogenetics and genomics. II Joint Congress on Evolutionary Biology **2018**, Montpellier, France. (poster)
16. **Mazzoleni S**, Augstenová B, Auer M, Fritz U, Praschag P, Protiva T, Velenský P, Kratochvíl L, Rovatsos M. Identification of an XX/XY sex determination system in the Australasian clade of chelid turtles (Testudines: Chelidae). PhD meeting in animal evolutionary biology **2018**, Svatý Jan pod Skalou, Czech Republic. (oral)
17. Augstenová B, **Mazzoleni S**, Kratochvíl L, Rovatsos M. Evolution of repetitive elements in W chromosome of advanced snakes. Zoologické dny **2018**, Prague, Czech Republic. (oral)
18. **Mazzoleni S**, Augstenová B, Praschag P, Fritz U, Auer M, Protiva T, Kratochvíl L, Rovatsos M. Identification of an XX/XY sex determination system in the Australasian clade of chelid turtles (Testudines: Chelidae). Zoologické dny **2018**, Prague, Czech Republic. (oral)
19. **Mazzoleni S**, Augstenová B, Kratochvíl L, Rovatsos M. Cytogenetic insights into chelid turtles (Testudines: Chelidae). Zoologické dny **2017**, Brno, Czech Republic. (oral)
20. **Mazzoleni S**, Schillaci O, Vlah S, Dumas F. Mapping of Interstitial Telomeric Sequences (TTAGGG)<sub>n</sub> in Primates. Zoologické dny **2017**, Brno, Czech Republic. (poster)

21. Augstenová B, Rovatsos M, Johnson Pokorná M, Altmanová M, **Mazzoleni S**, Kratochvíl L.  
Evoluce karyotypů a pohlavních chromozomů hadů. Zoologické dny **2017**, Brno, Czech  
Republic. (poster)