

# YONGHUI DONG



## EDUCATION

Oct.2010

Jun.2014

### Trento University, Italy

#### Fondazione Edmund Mach, Italy

PhD in Analytical Chemistry

Supervisors: Dr.Pietro Franceschi, Dr.Fulvio Mattivi & Prof.Guella Graziano

Thesis: Mass Spectrometry Imaging: Looking Fruits at Molecular Level

Jun.2012

Dec.2012

### Max Planck Institute for Chemical Ecology, Germany

Visiting PhD student

Supervisor: Dr.Ales Svatos

Project: Mass spectrometry imaging of surface lipids on intact *Drosophila melanogaster* flies

Sep.2008

Sep.2010

### Bologna University, Italy

#### Munich University of Technology, Germany

#### BOKU University, Austria

Triple MSc. in Horticulture Science

Supervisors: Dr. Stefano Tartarini, Dr. Luca Dondini & Prof. Dieter Treutter

Thesis: QTL Analysis of Sugars and Organic Acids in Apricot

Sep.2003

Jun.2006

### Northwest A&F University, China

BSc. in Bioengineering

Supervisor: Prof. Zhihui Cheng

Thesis: Effects of UV-C on the control of cucumber powdery mildew

## CONTACT

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🔗 [github.com/YonghuiDong](https://github.com/YonghuiDong)

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## RESEARCH INTERESTS

- Mass Spectrometry Imaging
- Metabolomics
- Chemoinformatics

## SKILLS

### Programming:

- R (9/10)
- Python (7/10)
- Git/GitHub (6/10)
- Docker (6/10)
- HTML/CSS (6/10)

*Last updated on 2022-06-05.*



## RESEARCH EXPERIENCE

Jan. 2021

Now

### Researcher

Blavatnik Center for Drug Discovery, Tel Aviv University, Israel

Dec. 2014

Dec. 2020

### Postdoctoral Research Fellow

Weizmann Institute of Science, Israel

Supervisor: Prof. Asaph Aharoni

Jul. 2014

Nov. 2014

### Research Associate

Trento University, Italy

Supervisor: Prof. Guella Graziano



## PUBLICATIONS

2022

### 23. TMT-based quantitative proteomics reveals protein biomarkers from cultured Pacific abalone (*Haliotis discus hannai*) in different regions

Food Chemistry: X, <https://doi.org/10.1016/j.fochx.2022.100355>

YimuLuan, Yonghui Dong (co-first author), Xuyuan Duan, Xiuli Wang, Yue Pang, Qingwei Li, MengGou

### 22. The metabolic and proteomic repertoires of periderm tissue in skin of the reticulated Sikkim cucumber fruit

Horticulture Research, doi: 10.1093/hr/uhac092

Gulab Chand Arya, Yonghui Dong (co-first author), Uwe Heinig, Nir Shahaf, Yana Kazachkova, Elinor Aviv-Sharon, Gal Nomberg, Ofir Marinov, Ekaterina Manasheroova, Asaph Aharoni, Hagai Cohen

### 21. Quantitative Trait Loci Mapping and Identification of Candidate Genes Linked to Fruit Acidity in Apricot Q13 (*Prunus armeniaca* L.)

Frontiers in Plant Science, doi: 10.3389/fpls.2022.838370

Luca Dondini, Cecilia Domenichini, Yonghui Dong, Fabio Gennari, Daniele Bassi, Stefano Foschi, Martina Lama, Marco Adami, Paolo De Franceschi, Claudia Cervellati, Lorenzo Bergonzoni, Sara Alessandri, Stefano Tartarini

### 20. RawHumus: an R Shiny App for Automated Raw Data Quality Control in Metabolomics

Bioinformatics, btac040

Yonghui Dong, Yana Kazachkova, Meng Gou, Liat Morgan, Tal Wachsmann, Ehud Gazit, Rune Isak Dupont Birkler

- 2021
- **19. CCWeights: an R package and web application for automated evaluation and selection of weighting factors for accurate quantification using linear calibration curve**  
Bioinformatics Advances, 1(1), vbab029  
[Yonghui Dong](#), Tal Wachsmann, Liat Morgan, Ehud Gazit, Rune Isak Dupon Birkler
  - **18. Characterization of the PRODUCTION OF ANTHOCYANIN PIGMENT 1 Arabidopsis Dominant Mutant using DLEMMA Dual Isotope Labeling Approach**  
Phytochemistry, 186  
[Yonghui Dong](#), Liron Feldberg, Ilana Rogachev, Asaph Aharoni
  - **17. The GORKY glycoalkaloid transporter is indispensable for preventing tomato bitterness**  
Nature Plant, 7, 468-480  
Yana Kazachkova, Itay Zemach, Sayantan Panda, Samuel Bocobza, Andrii Vainer, Ilana Rogachev, [Yonghui Dong](#), Shifra Ben-Dor, Dorottya Veres, Christa Kanstrup, Sophie Konstanze Lambert, Christoph Crocoll, Yangjie Hu, Eilon Shani, Simon Michaeli, Hussam Hassan Nour-Eldin, Dani Zamir, Asaph Aharoni
- 2020
- **16. High mass resolution, spatial metabolite mapping enhances the current plant gene and pathway discovery toolbox**  
New Phytologist, 2020, 228:1986-2002.  
[Yonghui Dong](#), Prashant Sonawane, Hagai Cohen, Guy Polturak, Liron Feldberg, Shelly Hen Avivi, Ilana Rogachev, Asaph Aharoni
  - **15. Rhizosphere microbiome mediates systemic root metabolite exudation by root-to-root signaling**  
Proceedings of the National Academy of Sciences, 2020, 7:3874-3883.  
Elisa Korenblum, [Yonghui Dong](#), Jędrzej Szymanski, Sayantan Panda, Adam Jozwiak, Hassan Massalha, Sagit Meir, Ilana Rogachev, Asaph Aharoni
- 2019
- **14. Miso: an R package for multiple isotope labeling assisted metabolomics data analysis**  
Bioinformatics, 2019, 35:3524-3526.  
[Yonghui Dong](#), Liron Feldberg, Asaph Aharoni
  - **13. A Multilevel Study of Melon Fruit Reticulation Provides Insight into Skin LignosubORIZATION Hallmarks**  
Plant Physiology, 2019, 179:1486-1501.  
Hagai Cohen, [Yonghui Dong](#), Jędrzej Szymanski, Justin Lashbrooke, Sagit Meir, Efrat Almekias-Siegl, Viktoria Valeska Zeisler-Diehl, Lukas Schreiber, Asaph Aharoni
  - **12. In plaque-mass spectrometry imaging of a bloom-forming alga during viral infection reveals a metabolic shift towards odd-chain fatty acid lipids**  
Nature Microbiology, 2019, 3:527-538.  
Guy Schleyer, Nir Shahaf, Carmi Ziv, [Yonghui Dong](#), Roy A Meoded, Eric JN Helfrich, Daniella Schatz, Shilo Rosenwasser, Ilana Rogachev, Asaph Aharoni, Jörn Piel, Assaf Vardi
- 2018
- **11. DLEMMA-MS-imaging for identification of spatially localized metabolites and metabolic network map reconstruction**  
Analytical Chemistry, 2018, 17:10231-10238.  
Liron Feldberg, [Yonghui Dong](#) (co-first author), Uwe Heinig, Ilana Rogachev, Asaph Aharoni

- **10. Mapping of cell wall aromatic moieties and their effect on hygroscopic movement in the awns of stork's bill**  
Cellulose, 2018, 25: 3827-3841.  
Yael Abraham, [Yonghui Dong](#), Asaph Aharoni, Rivka Elbaum
- 2017 ● **09. TLC surface integrity affects the detection of alkali adduct ions in TLC-MALDI analysis**  
Analytical and Bioanalytical Chemistry, 2017, 409: 5661-5666.  
[Yonghui Dong](#), Ruggero Ferrazza, Andrea Anesi, Graziano Guella, Pietro Franceschi
- **08. Engineered gray mold resistance, antioxidant capacity, and pigmentation in betalain-producing crops and ornamentals**  
Proceedings of the National Academy of Sciences, 2017, 14: 9062-9067.  
Guy Polturak, Noam Grossman, David Vela-Corcia, [Yonghui Dong](#), Adi Nudel, Margarita Pliner, Maggie Levy, Ilana Rogachev, Asaph Aharoni
- **07. Impact of tissue surface properties on the desorption electrospray ionization imaging of organic acids in grapevine stem**  
Rapid Communications in Mass Spectrometry, 2016, 30: 711-718.  
[Yonghui Dong](#), Graziano Guella, Pietro Franceschi
- 2016 ● **06. More than pictures: when MS imaging meets histology**  
Trends in Plant Science, 2016, 21: 686-698.  
[Yonghui Dong](#), Bin Li, Asaph Aharoni
- **05. Sample preparation for mass spectrometry imaging of plant tissues: a review**  
Frontiers in plant science, 2016.  
[Yonghui Dong](#), Bin Li, Sergey Malitsky, Ilana Rogachev, Asaph Aharoni, Filip Kaftan, Aleš Svatoš, Pietro Franceschi
- **04. Identification of microRNAs and their targets associated with fruit-bagging and subsequent sunlight re-exposure in the "Granny Smith" apple exocarp using high-throughput sequencing**  
Frontiers in plant science, 2016.  
Dong Qu, Fei Yan, Rui Meng, Xiaobing Jiang, Huijuan Yang, Ziyi Gao, [Yonghui Dong](#), Yazhou Yang, Zhengyang Zhao
- **03. Analytical capabilities of mass spectrometry imaging and its potential applications in food science**  
Trends in Food Science & Technology, 2016, 47: 50-63.  
Bin Li, Sage JB Dunham, [Yonghui Dong](#), Sohee Yoon, Maomao Zeng, Jonathan V Sweedler
- 2015 ● **02. High production of small organic dicarboxylate dianions by DESI and ESI**  
Journal of The American Society for Mass Spectrometry, 2015, 26: 386-389.  
[Yonghui Dong](#), Graziano Guella, Fulvio Mattivi, Pietro Franceschi
- 2012 ● **01. Combining intensity correlation analysis and MALDI imaging to study the distribution of flavonols and dihydrochalcones in Golden Delicious apples**  
Journal of experimental botany, 2012, 63: 1123-1133.  
Pietro Franceschi, [Yonghui Dong](#), Kerstin Strupat, Urska Vrhovsek, Fulvio Mattivi



## SOFTWARE

- **01. MSbox**  
A series of common mass spectrometry tools. It allows checking element isotopes, calculating (isotope labelled) exact monoisotopic mass,  $m/z$  values and mass accuracy, and inspecting possible contaminant mass peaks, examining possible adducts in electrospray ionization (ESI) and Matrix-Assisted Laser Desorption Ionization (MALDI) ion sources.  
[GitHub](#)
- **02. Miso**  
An efficient tool for fishing out labeled molecules from single, dual or multiple isotope labeling experiment.  
[GitHub](#), [Scholar](#)
- **03. CCWeights**  
The accuracy of any analytical method highly depends on the selection of an appropriate calibration model. CCWeights is designed to automatically assess & select the best weighting factors (WF) for accurate metabolite quantification using the linear calibration curve.  
[GitHub](#), [Scholar](#)
- **04. RawHummus**  
Robust and reproducible data is essential to ensure high-quality results for metabolomics studies where detector sensitivity drifts, retention time, and mass accuracy shifts frequently occur. RawHummus is designed to automatically detect measurement bias & verify system consistency.  
[GitHub](#), [Scholar](#)



## POSTERS & TALKS

- 2022 ● **How vampires suck blood? (Talk)**  
First Israel Metabolomics Meeting (Israel)
- **Software solutions in untargeted and targeted metabolomics (Poster)**  
First Israel Metabolomics Meeting (Israel)
- 2021 ● **Pixel-wise Colocalization Analysis for Metabolite Identification in Mass Spectrometry Imaging (Talk)**  
Waterman Seminar Series on Bioinformatics (Germany)
- 2017 ● **Application of MS Imaging in Plant Sciences (Talk)**  
Mass Spectrometry Imaging Symposium (France)
- **More than Pictures: When MS Imaging Meets Histology (Talk)**  
Spring School for Advanced Imaging in Biological Research (Israel)
- 2015 ● **Mass Spectrometry Imaging of Plant Metabolites (Poster)**  
Isranalytica 2015 (Israel)
- 2014 ● **Tissue Surface Properties Jeopardize Quantitative DESI Imaging of Organic Acids in Grapevine Stem (Poster)**  
20th International Mass Spectrometry Conference (Switzerland)
- 2013 ● **MS Imaging of Metabolites in Fruits (Poster)**  
3rd MS Food day (Italy)

- 2012 ● **MS Imaging of Small Metabolites in Fruits (Talk)**  
Ourense Conference on Imaging Mass Spectrometry (Spain)



## HONORS & AWARDS

- 2014 ● **COST Action FA1101 trainee fellowship in saffronomics, Spain**
- 2011 ● **Trento University PhD scholarship, Italy**
- 2010 ● **FEM GMPF scholarship, Italy**
- 2008 ● **Erasmus Mundus Scholarship, European Union**
- 2005 ● **Undergraduate Mathematical Modeling Contest, First Prize, China**