

## CHINEDU CHARLES NWAFOR (BSc, MSc, PhD)

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### INSTITUTIONS ATTENDED WITH DATES

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<b>University of Torino</b> and <b>Fondazione Edmund Mach-</b> Italy.	Department of Agriculture, School of Natural Sciences and Innovative Technologies.  Applied genomics group, Genomic and biology of fruit crops department, Centre for Research and Innovation, St. Michele al' Adige, Agricultural Institute Fondazione Edmund Mach (FEM). Italy.	<b>June 2011- April 2015</b>
<b>University of Nottingham,</b> United Kingdom.	Department of Plant and Crop Science	<b>September 2009 – December 2010</b>
<b>Federal University of Technology,</b> Minna Nigeria	School of Agriculture.	<b>March 2000 - June 2005</b>

### EDUCATIONAL QUALIFICATION WITH DATES

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<b>PhD degree</b>	Agricultural Science, Forestry and Food Science (Specialization in Plant Science& Crop Improvement)	<b>17<sup>th</sup> April, 2015</b>
<b>MSc degree</b>	Master in Crop Improvement	<b>10<sup>th</sup> December, 2010</b>
<b>BSc degree</b>	Bachelor in Agriculture Technology	<b>20<sup>th</sup> June, 2005</b>

### WORK EXPERIENCE

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**2025-Present** Senior Research Officer, Rubber Research Institute of Nigeria, Iyanomo, Benin City, Edo State.

<b>2022- Present</b>	Adjunct Lecturer I, Department of Crop Science, Faculty of Agriculture, University of Benin.
<b>2019- 2021</b>	Postdoctoral research fellow at Center for Plant Science Innovation University of Nebraska-Lincoln, E318 Beadle Center, Lincoln, Nebraska
<b>2016-2019</b>	Postdoctoral research fellow at National Research Center of Rapeseed Engineering and Technology, Huazhong Agricultural University, Wuhan, 430070, China.
<b>2011-2015</b>	Doctoral research fellow of Research and Innovation Centre, Fondazione Edmund Mach – IASMA, Italy.

### **ADJUNCT LECTURESHIP TAUGHT COURSES**

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#### **Undergraduate programme courses taught from 2022 to date**

<b>AGR322</b>	Agricultural genetics and breeding
<b>CRS511</b>	Plant breeding and genetics
<b>CRS522</b>	Plant Tissue Culture and Genetic Engineering

#### **Post-graduate programme courses taught from 2022 to date**

<b>CRS834</b>	Breeding for pest and disease
<b>CRS837</b>	Plant genetics resources
<b>CRS830</b>	Advance genetics
<b>CRS831</b>	Advanced cytogenetics
<b>CRS838</b>	Molecular techniques in crop improvement

### **STUDENT PROJECT SUPERVISION**

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Bachelor's degree project co-supervised from 2022 to date: Fifteen (15)

## AWARDS & GRANTS

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**2025-2026,** Innovation Awards for Climate-Smart Agriculture Partnership: UK-Brazil-Africa, “Project title: Development of Innovative Metal Oxide Nanoparticles to Enhance Waterlogging Tolerance in Crops”. (Lead investigator- RRIN/Nigeria).

**2024-2026,** CRP-ICGEB Research Grant Programme 2024: “Nanocarrier Systems for Applying Brasiosteroids and Spermidine to Improve Maize Seedling Performance under Waterlogging Conditions: A Climate Adaptation and Food Security Strategy for Cameroon. Project CRP/CRM24-04”. (Co-Principal investigator).

**2023-2024,** Institutional-Based TETFUND Research Grant: “Assessment and exploitation of functional diversity among Maize Landrace Germplasm for improving Waterlogging Tolerance in Maize”. (Co-Principal investigator).

**2023-2024,** World Bank CERHI Funded Project: “Prospect of Producing Commercial Quantity of Essential Oils from Underutilized Medicinal Flora for Promoting Entrepreneurship and Livelihood Sustenance” (Co-Principal investigator).

**2023-2024,** Institution-Based TETFUND Research Grant: “Application of artificial polyploidization in soursop (*Annona muricata* L.) As an approach to enhancing acetogenins: an anti-cancer agent”. (Co-Principal investigator).

**2022-2023,** Cambridge-Africa ALBORADA Research Fund for “An evaluation of genetic diversity, population structure and a conservation model for Africa's highly endangered fruit crop Serendipity Berry (*Dioscoreophyllum* spp)”. Funded Projects 2022/23 NO. 12. (Principal Investigator).

**2011-2015,** Fondazione Edmund Mach International PhD Research programme.

**2009- 2010,** University of Nottingham Developing Solutions Scholarship for Africa.

## PUBLICATION & THESIS

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- Atem J.E.C, Gan L, Yu W, Huang F, Wang Y, Baloch A, **Nwafor C.C**, Barrie A.U, Chen P, Zhang C. (2024). Bioinformatics and functional analysis of EDS1 genes in *Brassica napus* in response to *Plasmodiophora brassicae* infection. *Plant Sci.* 8;347:112175. doi: 10.1016/j.plantsci.2024.112175.

- Huang F, Chen P, Tang X, Zhong T, Yang T, **Nwafor CC**, Yang C, Ge X, An H, Li Z, Cahoon EB, Zhang C. (2023). Genome assembly of the Brassicaceae diploid *Orychophragmus violaceus* reveals complex whole-genome duplication and evolution of dihydroxy fatty acid metabolism. *Plant Commun.* 13;4(2):100432. doi: 10.1016/j.xplc.2022.100432.
- **Nwafor CC**, Li D, Qin P, Li L, Zhang W, Zhou Y, Xu J, Yin Y, Cao J, He L, Xiang F, Liu C, Guo L, Zhou Y, Cahoon EB and Zhang C (2022) Genetic and Biochemical Investigation of Seed Fatty Acid Accumulation in *Arabidopsis*. *Front. Plant Sci.* 13:942054. doi: 10.3389/fpls.2022.942054.
- Yang Z., Jiang Y., Gong J., Li Qian., Dun B., Liu D., Yin F., Yuan Lei., Zhou X., Wang H., Wang J., Zhan Z., Shah N., **Nwafor C.C.**, Zhou Y., Chen P., Zhu L., Li S., Wang B., Xiang J., Zhou Y., Li Z., Piao Z., Yang Q., Zhang C. (2022). R gene triplication confers European fodder turnip with improved clubroot resistance. *Plant Biotechnol J.* doi: 10.1111/pbi.13827.
- Kanu, U.C.; Liang, C.; **Nwafor, C.C.**; Shen, J.; Zhang, E. Phylogenetic Analyses of Cyprinid Species from the Rokel River Basin of Sierra Leone, West Africa: Taxonomic, Biogeographic, and Conservation Implications. *Diversity* 2022, 14, 299. <https://doi.org/10.3390/d14040299>
- Akram Salaha, **Chinedu Charles Nwafor**, Yuling Han, Lei Liu, Muhammad Rashid, Maria Batool, Ali Mahmoud El-Badri, Cougui Cao, Ming Zhan. (2021) Spermidine and brassinosteroid regulate root anatomical structure, photosynthetic traits and antioxidant defense systems to alleviate waterlogging stress in maize seedlings. *South African Journal of Botany*.144: 389-402. <https://doi.org/10.1016/j.sajb.2021.08.012>.
- Laura Costantini, Paula Moreno-Sanz, **Chinedu Charles Nwafor**, Silvia Lorenzi, Annarita Marrano, Fabiana Cristofolini, Elena Gottardini, Stefano Raimondi, Paola Ruffa, Ivana Gribaudo, Anna Schneider, Maria Stella Grando. Somatic variants for seed and fruit set in grapevine. (2021). *BMC Plant Biol* 21, 135 (2021). <https://doi.org/10.1186/s12870-021-02865-2>
- Cao Jian-bo, He Li-min, **Chinedu Charles Nwafor**, Qin Li-hong, Zhang Chun-yu, Song Yan-tun, Hao Rong. (2020). Ultrastructural studies of seed coat and cotyledon during rapeseed maturation. *Journal of Integrative Agriculture*, 19(0): 2–12
- Xu, J., **Nwafor, C.C.**, Shah, N., Zhou, Y., Zhang, C. (2019). Identification of genetic variation in *Brassica napus* seeds for tocopherol content and composition using near-infrared spectroscopy technique. *Plant Breeding*, DOI:10.1111/pbr.12708.

- Hu, L., Zhang, H., Yang, Q., Meng, Q., Han, S., **Nwafor, C.C.**, Khan, M.H.U., Fan, C., Zhou, Y. (2018). Promoter variations in a homeobox gene, BnA10.LMI1, determine lobed leaves in rapeseed (*Brassica napus* L.) *Theoretical and Applied Genetics*, 131, (12), 2699–2708.
- Adetula, A. A., Gu, L., **Nwafor, C. C.**, Du, X., Zhao, S., & Li, S. (2018). Transcriptome sequencing reveals key potential long non-coding RNAs related to duration of fertility trait in the uterovaginal junction of egg-laying hens. *Scientific reports*, 8(1), 13185.
- Ling, J., Li, R., **Nwafor, C. C.**, Cheng, J., Li, M., Xu, Q., Wu, J., Gan, L., Yang, Q., Liu, C., Chen, M., Zhou, Y., Cahoon, E. B. and Zhang, C. (2017), Development of iFOX-Hunting as a Functional Genomics Tool and Demonstration of its Use to Identify Early Senescence-Related Genes in the Polyploid *Brassica napus*. *Plant Biotechnol J.* doi:10.1111/pbi.12799.
- Zhan Z, **Nwafor C.C.**, Hou Z, Gong J, Zhu B, Jiang Y, et al. (2017) Cytological and morphological analysis of hybrids between *Brassicoraphanus*, and *Brassica napus* for introgression of clubroot resistant trait into *Brassica napus* L. *PLoS ONE* 12(5): e0177470. <https://doi.org/10.1371/journal.pone.0177470>
- **Nwafor, C. C.**, Gribaudo, I., Schneider, A., Wehrens, R., Grando, M. S., & Costantini, L. (2014). Transcriptome analysis during berry development provides insights into co-regulated and altered gene expression between a seeded wine grape variety and its seedless somatic variant. *BMC genomics*, 15(1), 1030. doi:10.1186/1471-2164-15-1030.
- **Chinedu Charles Nwafor**, 2015. Genetic investigation of seed development in grapevine. PhD Thesis, University of Torino, Italy
- **Chinedu Charles Nwafor**, 2010. Genetic analysis of genes regulated by the N-end Rule Pathway of targeted protein degradation (NERP) during seed germination in *Arabidopsis thaliana*. MSc Thesis, University of Nottingham, United Kingdom.
- **Chinedu Charles Nwafor**, 2005. Growth response and carcass characteristics of weaned Rabbits fed forages, supplements, and formulated concentrate. BSc Thesis, Federal University of Technology, Minna.
- Online profile.

[https://openpub.fmach.it/browse?type=author&authority=rp00692&authority\\_lang=en#.WQWZYY9OJy1](https://openpub.fmach.it/browse?type=author&authority=rp00692&authority_lang=en#.WQWZYY9OJy1)

## CONFERENCES AND WORKSHOPS

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- **Chinedu Charles Nwafor**, Kabiru Mu'azu, Georges Ndzana, Ekeoba Matthew Isikhuemen, Margaret Koyenikan, Chibuzo Nwaoguala and CERHI. (2024, February 13<sup>th</sup>). Pilot production of Essential oils (EOs) from six African medicinal plants: *Apium graveolens*, *Eucalyptus robusta*, *Cymbopogon citratus*, *Okoubaka aubrevillei*, *Dioscoreophyllum cumminsii*, and *Moringa oleifera*. Poster presented at 4th UBARD Conference, University of Benin, Benin City, Edo State, Nigeria.
- **Chinedu Charles Nwafor**, Kabiru Mu'azu, Georges Ndzana, Ekeoba Matthew Isikhuemen, Margaret Koyenikan, Chibuzo Nwaoguala, and CERHI. (2024, February 14<sup>th</sup>). Development of a Steam Distillation Pilot Plant for the Production of Essential Oils from Medicinal Plant Leaves & Seeds. Poster presented at 4th UBARD Conference, University of Benin, Benin City, Edo State, Nigeria.
- **Chinedu Charles Nwafor**, Delin Li, Edgar B. Cahoon, and Chunyu Zhang. Genetic Dissection of Photosynthetic Organ Contribution to Seed Oil Accumulation in Arabidopsis Seeds reveals a potential role for the Plastidial Oxidative Pentose Phosphate pathway. Paper presented at the I-BE-C 2021 International Bioenergy and Environment Congress, From photosynthesis to biotechnologies, Web congress February 16-18 2021, SUD Provence-Alpes-Côte-d'Azur Region. France.
- **Chinedu Charles Nwafor**, Delin Li, Edgar B. Cahoon, and Chunyu Zhang. Genetic and Biochemical Investigation of Sources of Reducing Power Required for Fatty Acid Biosynthesis in Seeds. Paper presented at the 23rd International Symposium on Plant Lipids (ISPL2018), July 8-13 July 2018, Yokohama, Japan.
- **Chinedu Charles Nwafor**, Juan Ling, Renjie Li, Maoteng Li, Qing Xu<sup>1</sup>, Yongming Zhou<sup>1</sup>, Edgar Cahoon, Chunyu Zhang. iFOX-Hunting system combine with RNA-seq-based transcriptome analysis to reveal the functional role of ACBP1-like mediated early leave senescence in Arabidopsis. Poster presented at the 2nd Molecular Plant International Symposium: From Genes to Networks, August 11-14, 2016, Tsinghua University
- **Chinedu Charles Nwafor**., Costantini, L., Gribaudo, I., Schneider, A., Wehrens, R., & Grando, S. (2012). Genetic investigation of seed formation during berry development using RNA-Seq reveals transcriptional changes in grapevine (*Vitisvinifera* L.). Paper

presented at 2nd Symposium on Horticulture in Europe, Angers France. Identifier to cite or link to this item: <http://hdl.handle.net/10449/21480>.

## REFERENCES

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