

CHANG GYO JUNG

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Department of Biology
University of Central Florida
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EDUCATION

Ph.D., Biology

Northern Arizona University Dec 2019
Dissertation: “Trends and variability of carbon cycle in response to experimental warming in tallgrass prairie”
Committee: Yiqi Luo (chair), Bruce Hungate, Ted Schuur, Michelle Mack, Christopher Doughty

M.S., Agriculture

Kangwon National University Feb 2013
Thesis: “Molecular characterization and concerted evolution of two genes encoding RING-C2 type proteins in rice”
Advisor: Cheol Seong Jang

B.S., Agriculture

Kangwon National University Feb 2011

RESEARCH EXPERIENCE

Ecoinformatic Lab, University of Central Florida Dec 2019 - present

PI: Oleksandra (Sasha) Hararuk

- Postdoctoral Researcher
 - Examining processes of carbon cycle model and testing model-driven hypothesis: this topic leverages NEON datasets to integrate into the model.

Ecolab, University of Oklahoma and Northern Arizona University 2014-2019

Advisor: Yiqi Luo

- Research Assistant
 - Examining long-term experimental warming effects on ecosystem carbon cycle in a grassland ecosystem
 - Investigating ecosystem responses to extremely drought and wet
 - Developing and maintaining Ecological Platform for Assimilating Data into models (EcoPAD) for real- or near-time ecological forecasting

Plant Genomics Lab, Kangwon National University 2009 - 2013

Advisor: Cheol Seong Jang

- Research Assistant
 - Genomics-based approach for plant responses to ion-irradiation by using bioinformatics. The Korea Atomic Energy Research Institute. 2010. 3 – 2012. 12

- Functional genomic approaches and network constructions of the genes encoding RING finger proteins involved in protein degradation pathway in rice. National Research Foundation of Korea. 2010. 5 – 2013.4

PUBLICATIONS

Journal Publications

1. **Jung, C.G.**, Xu, X., Niu, S., Liang, J., Chen, X., Shi, Z., Jiang, L. & Luo, Y. (2019) Experimental warming amplified opposite impacts of drought vs. wet extremes on ecosystem carbon cycle in a tallgrass prairie. *Agricultural and Forest Meteorology*, **276**, 107635.
2. **Jung, C. G.**, Hwang, S.-G., Park, Y. C., Park, H. M., Kim, D. S., Park, D. H., and Jang, C. S. (2015). "Molecular characterization of the cold-and heat-induced Arabidopsis PXL1 gene and its potential role in transduction pathways under temperature fluctuations." *Journal of plant physiology* 176: 138-146.
3. **Jung, C. G.**, Lim, S. D., Hwang, S.-G., and Jang, C. S. (2012). "Molecular characterization and concerted evolution of two genes encoding RING-C2 type proteins in rice." *Gene* 505(1): 9-18.
4. Guo, X., Gao, Q., Yuan, M., Wang, G., Zhou, X., Feng, J., Shi, Z., Hale, L., Wu, L., Zhou, A., Tian, R., Liu, F., Wu, B., Chen, L., **Jung, C. G.**, Niu, S., Li, D., Xu, X., Jiang, L., Escalas, A., Wu, L., He, Z., Nostrand, J. V., Ning, D., Liu, X., Yang, Y., Schuur, E., Konstantinidis, K., Cole, J., Penton, C R., Luo, Y., Tiedje, J., and Zhou, J. (2020) "Gene-informed decomposition model predicts lower soil carbon loss due to persistent microbial adaptation to warming." *Nature Communications* (accepted)
5. Castillioni, K., Wilcox, K., Jiang, L., Luo Y., **Jung, C. G.**, Souza L. (2020). "Drought mildly reduces plant dominance in a temperate prairie ecosystem across years." *Ecology and Evolution* 10(13): 6702-6713.
6. Huang, Y., Stacy, M., Jiang, J., Sundi, N., Ma, S., Saruta, V., **Jung, C. G.**, Shi, Z., Xia, J., and Hanson, P. J., Ricciuto, D., Luo, Y. (2019). "Realized ecological forecast through an interactive Ecological Platform for Assimilating Data (EcoPAD, v1. 0) into models." *Geoscientific Model Development* 12(3): 1119-1137.
7. Peng, F., **Jung, C. G.**, Jiang, L., Xue, X., and Luo, Y. (2018). "Thermal acclimation of leaf respiration varies between legume and non-legume herbaceous." *Journal of Plant Ecology*.
8. Shi, Z., Lin, Y., Wilcox, K. R., Souza, L., Jiang, L., Jiang, J., **Jung, C. G.**, Xu, X., Yuan, M., and Guo, X., Wu, L., Zhou, J., Luo, Y. (2018). "Successional change in species composition alters climate sensitivity of grassland productivity." *Global change biology* 24(10): 4993-5003.

9. Feng, W., Liang, J., Hale, L. E., **Jung, C. G.**, Chen, J., Zhou, J., Xu, M., Yuan, M., Wu, L., Bracho, R., Pegoraro, E., Schuur, E., Luo, Y. (2017). "Enhanced decomposition of stable soil organic carbon and microbial catabolic potentials by long-term field warming." *Global change biology* 23(11): 4765-4776.
10. Lim, S. D., **Jung, C. G.**, Park, Y. C., Lee, S. C. Lee, C., Lim, C. W., Kim, D. S., and Jang, C. S. (2015). "Molecular dissection of a rice microtubule-associated RING finger protein and its potential role in salt tolerance in Arabidopsis." *Plant molecular biology* 89(4-5): 365-384.
11. Lim, S. D., Hwang, J.-G., **Jung, C. G.**, Hwang, S.-G., Moon, J.-C., and Jang, C. S. (2013). "Comprehensive analysis of the rice RING E3 ligase family reveals their functional diversity in response to abiotic stress." *DNA research* 20(3): 299-314.

Journal Papers in Revision

1. **Jung, C. G.**, Du, Z., Hararuk, O., X, X., Liang, J., Zhou, X., Li, D., Jiang, L., Luo, Y. (2020). "Long-term soil respiration measurements in a mixed grass prairie reveal a change in soil organic carbon recalcitrance and its environmental sensitivity under warming" in *Oecologia*

Journal Papers in Prep

1. **Jung, C. G.**, Xu, X., Shi, Z., Niu, S., Xia, J., Sherry, R., Jiang, L., Zhu, K., Hou, E., and Luo, Y. (2020). "Warmer and wetter climate promotes net primary production in a C₄-dominant grassland"

CONFERENCE PRESENTATIONS

1. "Assessing Annual Net Ecosystem Carbon Balance Using a Data-Model Fusion Approach – Application of Data from National Ecological Observatory Network" 2020 American Geophysical Union (AGU) Fall Meeting. Online Everywhere (planned)
2. "Ecosystem feedbacks to climate warming: temporal dynamics of soil respiration and decomposition of soil organic carbon over a long-term field warming and its further impacts on ecosystem carbon residence time" 2019 American Geophysical Union (AGU) Fall Meeting. San Francisco, CA
3. "Soil respiration and decomposition of soil organic carbon under a long-term field warming" 2018 American Geophysical Union (AGU) Fall Meeting. Washington, D.C.

4. “Ecosystem response to climatic variables – air temperature and precipitation: How can these variables alter plant productions in C₄-grass dominant ecosystem?”
2017 American Geophysical Union (AGU) Fall Meeting. New Orleans, LA
5. “Extreme drought exacerbated impacts of warming on carbon cycle in a tallgrass prairie”
Ecological Society of America (ESA) 2017. Portland, OR
6. “Leaf Respiratory Acclimation: Magnitude of Acclimation to the Long-term Warming in Tallgrass Prairie”
2016 American Geophysical Union (AGU) Fall Meeting. San Francisco, CA

AWARDS

The ECOSS Travel and Research Awards Program (TRAP) award
Center for Ecosystem Science and Society (ECOSS), Northern Arizona University 2019

PROFESSIONAL TRAINING

Training Course on New Advances in Land Carbon Cycle Modeling

Northern Arizona University, Flagstaff, May 2019

– Led one afternoon session

Practice with EcoPAD for simulation, data assimilation, and forecasting

Training Course on New Advances in Land Carbon Cycle Modeling

Northern Arizona University, Flagstaff, May 2018

Genome Data Analysis Workshop 2011

Systems Biomedical Informatics National Core Research Center, Seoul National University
College of Medicine, 2011

Radiation Worker Safety Education

Kangwon National University, 2012

LANGUAGES

Korean: Native Language

English: Intermediate/Advance Listener and Speaker, Advanced Reading and Writing

COMPUTER SKILLS

Programming: R, Matlab, Python, Fortran, Shell script

Applications: Microsoft PowerPoint, Microsoft Word, Microsoft Excel, Adobe Acrobat, Adobe Photoshop

Platforms: Microsoft Windows and Linux