TONG QIU

Email: tvq5043@psu.edu
Website: www.tongqiulab.com
Office: FRB 307; Lab: FRB 228

Ecosystem Science & Management
Pennsylvania State University
University Park, PA, 16802, USA

EDUCATION

May 2020 **Ph.D., Geography, University of North Carolina at Chapel Hill, NC, USA**
Dissertation: Characterizing the responses of land surface phenology to urbanization, climate change, and extreme weather events using remote sensing and Bayesian models.

Committee: Drs. Conghe Song (chair and adviser), James S. Clark (Duke), Erika Wise, Diego Riveros-Iregui, and Allen Hurlbert (UNC Biology)

June 2015 **B.Eng., Remote Sensing, Wuhan University, China**
(Graduated with the Highest Honor, GPA Ranking: 1/229)
Thesis: Water body extraction based on satellite imagery
Advisor: Drs. Yue Wang and Zhongqiu Liu

ACADEMIC APPOINTMENTS

2022 – **Pennsylvania State University**, University Park, PA
Assistant Professor, Department of Ecosystem Science and Management
Faculty Associate, Institute for Computational and Data Sciences
Graduate Faculty, Intercollege Graduate Degree Program in Ecology

2020 – 2022 **Duke University,** Durham, NC
Postdoc Associate (PIs: James. S. Clark, Jennifer J. Swenson)

2015 – 2020 **University of North Carolina at Chapel Hill**, Chapel Hill, NC
Graduate Assistant; Instructor (2019 Fall)

PUBLICATIONS

<u>PUBLISHED JOURNAL ARTICLES</u>

2023

[18] **T. Qiu**, M.-C. Aravena Acuna, D. Ascoli, Y. Bergeron, M.Bogdziewicz, R. Bonal, T. Caignard, M. Cailleret, R. Calama, J. J. Camarero, C.-H. Chang-Yang, J. Chave, F. Chianucci, B. Courbaud, A. Cutini, A. Das, N. Delpierre, S. Delzon, M. Dietze, S. Donoso Calderon, L. Dormont, J. M. Espelta, T. Fahey, W. Farfan-Rios, J. Franklin, C. Gehring, G. Gilbert, G. Gratzer, C. Greenberg, A. Guignabert, Q. Guo, A. Hacket-Pain, A. Hampe, Q. Han, J. Holík, K. Hoshizaki, I. Ibañez, J. Johnstone, V. Journé, T. Kitzberger, J. Knops, G. Kunstler, J. Lageard, J. LaMontagne, F. Lefevre, T. Leininger, J.-M. Limousin, J. Lutz, D. Macias, A. Marell, E. McIntire, C. Moore, E. Moran, R. Motta, J. Myers, T. Nagel, M. Noguchi, R. Parmenter, P. Samonil, I. Pearse, I. Perez-Ramos, L. Piechnik, T. Podgorski, J. Poulsen, M. Redmond, C. Reid, K. Rodman, F. Roiguez-Sanchez, J. Sanguinetti, C. L. Scher, B. Seget, S. Sharma, M. Silman, M. Steele, N. Stephenson, J. Straub, S. Sutton, J. Swenson, M. Swift, P. Thomas, M. Uriarte, G. Vacchiano, A. Whipple, T. Whitham, A. Wion, S. Wright, K. Zhu, J. Zimmerman, M. Żywiec, and J. S. Clark. Masting is uncommon in trees that depend on mutualist dispersers in the context of global climate and fertility

gradients (2023), *Nature Plants, doi: 10.1038/s41477-023-01446-5*

- [Behind the paper](#) and News coverage: [Science Daily](#), [Phys.org](#), [EurekAlert!](#), [Science Magazine](#), [Mirage News](#), [Skynews](#), [Earth.com](#), [Outdoor News](#), [Penn State News](#)

[17] **T. Qiu**, A. Bell, J. J. Swenson, J. S. Clark. Habitat-trait interactions that control response to climate change: North American ground beetles (Carabidae) (2023)*, Global Ecology and Biogeography, doi: 10.1111/geb.13670*

- [Cover article](#) and News coverage: [Science Daily](#), [Phys.org](#), [EurekAlert!](#), [ENN](#), [Mirage News](#), [Earth.com](#)*,* [Penn State News](#), [Duke News](#)

[16] Wu, H., Zhuang, M., Chen, Y., Meng, C., Wu, C., Ouyang, L., Liu, Y., Shu, Y., Tao, Y., **T. Qiu**, and Li, J. Urban Treetop Detection and Tree-Height Estimation from Unmanned-Aerial-Vehicle Images (2023), *Remote Sensing, doi: 10.3390/rs15153779*

[15] M. Bogdziewicz., Calama R, Courbaud B, Espelta JM, Hacket-Pain A, Journé V, Kunstler G, Steele M, **T. Qiu**, Zywiec M, and J.S. Clark. How to measure mast seeding? (2023)*, New Phytologist, doi: 10.1111/nph.18984*

[14] Q. Ma, C. Niu, Q. Ma, T. Hu, X. Luo, X. Tai, **T. Qiu,** Y. Zhang, R. Bales, L. Liu, M. Kelly, and Q. Guo, Tree mortality during long-term droughts is lower in structurally complex forest stands (2023), *Nature Communications, doi: 10.1038/s41467-023-43083-8*

[13] M. Bogdziewicz, …, **T. Qiu**, …, J. S. Clark (94 co-author listed alphabetically, I am one of the six authors that co-wrote the paper), Seed size and number on the map of trait syndromes in trees (2023), *Global Ecology and Biogeography, doi: 10.1111/geb.13652*

2022

[12] C. Wu, C. Li, L. Ouyang, H. Xiao, J. Wu, M. Zhuang, X. Bi, J. Li, C. Wang, C. Song, **T. Qiu**, D. Haase, M. Finka. Spatiotemporal evolution of urbanization and its implications to urban planning of the megacity, Shanghai, China (2022), *Landscape Ecology, doi: 10.1007/s10980-022-01578-7*

[11] **T. Qiu**, R. Andrus, M.-C. Aravena, D. Ascoli, Y. Bergeron, R. Berretti, D. Berveiller, M. Bogdziewicz, T. Boivin, R. Bonal, D. C. Bragg, T. Caignard, R. Calama, J. J. Camarero, C.-H. Chang-Yang, N. L. Cleavitt, B. Courbaud, F. Courbet, T. Curt, A. J. Das, E. Daskalakou, H. Davi, N. Delpierre , S. Delzon, M. Dietze, S. Donoso Calderon, L. Dormont, J. Espelta, T. J. Fahey, W. Farfan-Rios, C. A. Gehring, G. S. Gilbert, G. Gratzer, C. H. Greenberg, Q. Guo, A. Hacket-Pain, A. Hampe, Q. Han, J. Hille Ris Lambers, K. Hoshizaki, I. Ibanez, J. F. Johnstone, V. Journe, D. Kabeya, C. L. Kilner, T. Kitzberger, J. M.H. Knops, R. K. Kobe, G. Kunstler, J. G.A. Lageard, J. M. LaMontagne, M. Ledwon, F. Lefevre, T. Leininger, J.-M. Limousin, J. A. Lutz, D. Macias, E. J.B. McIntire, C. M. Moore, E. Moran, R. Motta, J. A. Myers, T. A. Nagel, K. Noguchi, J.-M. Ourcival, R. Parmenter, I. S. Pearse, I. M. Perez-Ramos, L. Piechnik, J. Poulsen, R. Poulton-Kamakura, M. D. Redmond, C. D. Reid, K. C. Rodman, F. Rodriguez-Sanchez, J. D. Sanguinetti, C. L. Scher, W. H. Schlesinger, H. Schmidt Van Marle, B. Seget, S. Sharma, M. Silman, M. A. Steele, N. L. Stephenson, J. N. Straub, I-Fang Sun, S. Sutton, J. J. Swenson, M. Swift, P. A. Thomas, M. Uriarte, G. Vacchiano, T. T. Veblen, A. V. Whipple, T. G. Whitham, A. P. Wion, B. Wright, S. J. Wright, K. Zhu, J. K. Zimmerman, R. Zlotin, M. Zywiec, and J. S. Clark. Limits to reproduction and seed size-number trade-offs that shape forest dominance and future recovery (2022), *Nature Communication,* 13:2381*; doi: 10.1038/s41467-022-30037-9*

- [Editors' Highlights](#) and News coverage: [Science Daily](#), [Terra Daily](#), [Phys.org](#), [EurekAlert!](#), [NSF](#), [Mirage News](#), [True Viral News](#), [AZO Cleantech](#), [Thinking port](#), [Duke News](#), [NSF News](#)

[10] V. Journe, …, **T. Qiu**, …, J. S. Clark (101 co-author listed alphabetically, I am one of the five authors that co-wrote the paper), Globally, tree fecundity exceeds productivity gradients (2022), *Ecology letters*, 25, no. 6*,* 1471-1482; *doi: 10.1111/ele.14012*

2021

[9] **T. Qiu**, M. Aravena, R. Andrus, D. Ascoli, Y. Bergeron, R. Berretti, M. Bogdziewicz, T. Boivin, R. Bonal, T. Caignard, R. Calama, C. Julio, C. Clark, B. Courbaud, S. Delzon, C. Donoso, W. Farfan-Rios, C. Gehring, G. Gilbert, C. Greenberg, Q. Guo, R. Hille, K. Hoshizaki, I. Ibanez, V. Journe, C. Kilner, R. Kobe, W. Koenig, G. Kunstler, J. LaMontagne, M. Ledwon, J. Lutz, R. Motta, J. Myers, T. Nagel, C. Nunez, I. Pearse, L. Piechnik, J. Poulsen, R. Poulton-Kamakura, M. Redmond, C. Reid, K. Rodman, C. Scher, V. Schmidt, B. Seget, S. Sharma, M. Silman, J. Swenson, M. Swift, M. Uriarte, G. Vacchiano, T. Veblen, A. Whipple, T. Whitham, A. Wion, S. Wright, K. Zhu, J. Zimmerman, M. Zywiec, J. S. Clark. Is there tree senescence? The fecundity evidence (2021), *Proceedings of the National Academy of Sciences (PNAS) 118(34)*; *doi: 10.1073/pnas.2106130118*

- [From the Cover](#) and News coverage: [TheScientist](#), [News Break](#), [Phys.org](#), [Le Figaro](#), [Mirage News](#), [Green Report](#), [France Inter](#), [Sciences et Avenir](#), [Duke News](#), [WUSTL News,](#) [NSF News](#)

[8] **T. Qiu**, S. Sharma, C. Woodall, J. S. Clark. The niche shifts from trees to fecundity to recruitment that determine species redistribution with climate change (2021), *Frontiers in ecology and evolution*; doi: *10.3389/fevo.2021.719141*

[7] M. Jiang, Y. He, Y. Pan, **T. Qiu**, S. Tian. Disaggregating climatic and anthropogenic influences on vegetation changes in Beijing-Tianjin-Hebei region of China (2021), *Science of the total environment 786: 147574; doi: 10.1016/j.scitotenv.2021.147574*

Prior to 2020

[6] **T. Qiu,** C. Song, J. S. Clark, B. Seyednasrollah, N. Rathnayaka, J. Li. Understanding the continuous phenological development at a daily time step with a Bayesian hierarchical space-time model: impacts of climate change and extreme weathers (2020), *Remote Sensing of Environment 247: 11956; doi: 10.1016/j.rse.2020.111956*

[5] **T. Qiu**, C. Song, J. Li. Deriving Annual Double-Season Cropland Phenology Using Landsat Imagery (2020), *Remote Sensing*, 12: 3275; *doi: 10.3390/rs12203275*

[4] **T. Qiu,** C. Song, Y. Zhang, H. Liu, and J. M. Vose. Urbanization and climate change jointly shift land surface phenology in the mid-latitude large cities (2020), *Remote Sensing of Environment 236: 111477; doi: 10.1016/j.rse.2019.111477*

[3] Q. Zhang, Y. Wang, S. Tao, R.E. Bilsborrow, **T. Qiu**, C. Liu, S. Sannigrahi, Q. Li, and C, Song, Divergent socioeconomic-ecological outcomes of China's conversion of cropland to forest program in the subtropical mountainous area and the semi-arid Loess Plateau (2020), *Ecosystem Services* 45: 101167*; doi: 10.1016/j.ecoser.2020.101167*

[2] **T. Qiu**, C. Song, and J. Li, Impacts of urbanization on vegetation phenology over the past three decades in Shanghai, China (2017), *Remote Sensing 9.9: 970; doi:10.3390/rs9090970*

MANUSCRIPTS IN REVISION

[1] **T. Qiu,** J. S. Clark, K. R. Kovach, P. A. Townsend, J. J. Swenson, Remotely sensed crown nutrient concentrations affect forest reproduction across the United States, *in revision*, *Ecology*

MANUSCRIPT IN REVIEW/PREPARATION

T. Qiu, C. Song. Projected changes of vegetation phenology in the next 100 years across the continental United States, *under review*

X. Li (postdoc), …, **T. Qiu.** Species interactions mitigate plant phenology response to environmental change across NEON domain, *under review by co-authors (full draft available upon request)*

X. Li (postdoc), …, **T. Qiu.** Modeling of fall senescence needs to incorporate species interaction: evidence from the National Phenology Network (NPN), *in preparation (results available)*

T. Qiu, …, J.S. Clark. The timing of spring green-up affects tree reproduction in the temperate and boreal forests, *in preparation (results available)*

CONFERENCE ARTICLE AND OTHER PUBLICATIONS

J.J. Swenson, **T. Qiu**, A. Schwantes, C. Kilner, C. Nunez. L. Scher, S. Sharma, and J.S. Clark. Community reorganizing response to climate change: species interactions, state-space model, and food webs. *2020 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*

GRANTS

Current Extramural Grants (~$1.2 million, ~$1 million as lead PI)

Determining forest recruitment change through the integration of NASA Earth observation data and predictive modeling, *NASA ROSES*, **lead PI: T. Qiu**, co-PIs: J. S. Clark (Duke), M. E. McDill, 01/01/2024-12/31/2027, $1,012,073 from NASA and an additional $454,700 cost-share from PA Department of Conservation and Natural Resources (DCNR). Penn State News

Improving predictions of forest management effects on the abiotic environment and its implications for wildlife habitat suitability. *USDA McIntire-Stennis Grant*, lead PI: J. Avery, other PIs: **T. Qiu**, D. Miller, 10/1/2022 – 10/1/2024, $199,788 (direct cost only)

Current Grants and Awards from Penn State (~$150K as lead PI)

Developing climate-smart agricultural practices under global climate change, *Institute for Sustainable Agricultural, Food, and Environmental Science (SAFES) seed grant*, **sole PI: T. Qiu,** collaborators: A. R. Kemanian, 02/01/2023 – 09/31/2024, $8,500.

Forest biodiversity modeling through the synthesis of hyperspectral, LiDAR, and tree inventories within a deep learning framework, *Institute for Computing and Data Sciences (ICDS) seed grant*, **lead PI: T. Qiu,** co-PIs: M. Yu, 07/01/2023 – 08/31/2024, $30,000 and an additional $22,000 cost-share from the College of Agricultural Sciences.

Understanding 21st century forest regeneration: the bridge from habitat to forest trees to vertebrate community in a changing climate, *Bridges Large Research Grant at the Department of Ecosystem Science and Management*, **lead PI: T. Qiu**, co-PIs: J. Avery, F. Buderman, P. Drohan, J. Duncan, L. Leites, M. McDill, D. Miller, 04/15/2023 – 06/30/2023, $50,000 and an additional $43,177 match from faculty fund.

Pending Extramural Grants (~$600K as sole PI, ~$3 million as co-PI)

Continent-wide biodiversity forecasts: the interactions between climate and habitat conditions, *NASA New (Early Career) Investigator*, submitted, **sole PI: T. Qiu,** collaborators: J. S. Clark, P. A. Townsend

Predicting the impacts of climate and habitat on mammal diversity: A multi-scale, multi-dimensional remote sensing approach, *NSF Macrosystem Biology and NEON-Enabled Science*, **sole PI: T. Qiu**

Socioecological Outcomes of Restoration: Discovering the interplay among biophysical, socioeconomic, and institutional dimensions of dryland forest-grassland landscapes, *NSF DISES,* lead PI: I. Djenontin, co-PIs: F. Fleischman, **T. Qiu**, E. Smithwick

Tropical Glacier-fed Rivers: Cascading Eco-Socio-Hydrology and Governance Dynamics (TRILOGY), *NSF DISES,* lead PI: C. Scott, co-PIs: S. Buechler, **T. Qiu**, A. Rivadeneira

Grants that will be resubmitted in June 2024

Combining terrestrial and airborne LiDAR to evaluate forest regeneration potential in central PA, *USDA McIntire-Stennis Grant*, submitted, **sole PI: T. Qiu,** collaborators: M. E. McDill, B. Harding

TEACHING EXPERIENCE

PENNSYLVANIA STATE UNIVERSITY

2023 Fall: Instructor of Record

FOR/SOIL/WFS 597: Advance GIS and Remote Sensing (Fall 2023, 11 graduate students)

<u>Course evaluation:</u> TBD
- Ecological applications in R and Google Earth Engine (GEE)

2023 Spring: Instructor of Record

<u>FOR 455:</u> Remote Sensing and Spatial Data Handling (Spring 2023, 23 undergraduates)
<u>Course evaluation:</u> median 6/7, mode 7/7, *report available upon request.*
- Forest ecology and environmental data sciences in ArcGIS Pro and FUSION

<u>UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL</u>

2019: Instructor of Record

<u>GEOG 391:</u> Quantitative methods for geographers (Fall 2019, 25 students)
- Teaching the concepts of fundamental statistics and their applications, including descriptive statistics, data visualization, probability theory, probability distribution, point estimation, hypothesis testing, ANOVA, and basic spatial statistics.
- Creating slides and notes from scratch
- Designing in-class activities (e.g., simulation games and on-line visualization) to help students better understand statistical concepts.
- Designing and grading five homework, two mid-terms, and one final exam.
<u>Course evaluation:</u> mean 4.45/5.0, *report available upon request.*

2018 – 2019: Teaching Assistant

<u>GEOG 477:</u> Introduction to Remote Sensing (Fall 2018)
<u>GEOG 577:</u> Advance Remote Sensing (Spring 2018)
<u>GEOG 370:</u> Introduction to Geographic Information (Spring 2019)

2019: Recitation Instructor *(teaching the usage of ArcGIS and leading problem-solving recitations)*

<u>GEOG 370:</u> Introduction to Geographic Information (Spring 2019)

<u>GUEST LECTURE</u>

<u>ECLGY 515:</u> Advances in Ecology (Fall 2022, Penn State)
<u>ENVI 558:</u> Image classification on GEE (Fall 2020, Fall 2021, Fall 2022, Duke)
<u>GEOG 370:</u> Introduction to geographic information (Spring 2019, UNC)
<u>GEOG 577:</u> Advanced Remote Sensing (Spring 2018, Spring 2019, UNC)
<u>GEOG 441:</u> Introduction to Watershed Systems (Spring 2016, UNC)

INVITED TALKS

2023	**T. Qiu**. Understanding the regeneration potential of forests under global change. Sino-Ecologists Association Overseas Seminar, Oct. 3rd **(virtual)**
2023	**T. Qiu**. How remote sensing can help us advance the understanding of biodiversity change. Center for Artificial Intelligence Foundations and Engineered Systems, Penn State, Sep. 27th
2023	**T. Qiu**. Understanding the regeneration potential of forests under global change. Department of Biology, New Jersey Institute of Technology, Sep. 19th
2023	**T. Qiu**. Climate-habitat interactions that control biodiversity change: synthesizing NEON AOP with ground observations. National Ecological Observatory Network (NEON) Science Seminar Series, Sep. 12th **(virtual)**
2023	**T. Qiu**. Winners or losers under climate change? It depends on habitat. Climate Solutions Symposium, Penn State, May. 22nd – 23rd **(talk and panelist)**
2023	**T. Qiu**. Response of forest ecosystem functions to climate change. Department of

Meteorology and Atmospheric Science, Dynamic Climate Seminar, Penn State, Feb. 18th

| 2022 | **T. Qiu**. Combined LiDAR and Hyperspectral imagery in understanding biodiversity and forest reproduction. Peking University, July 5th **(virtual)** |

| 2022 | **T. Qiu**, Usage of joint species modeling in understanding regeneration niche shifts. Ecological Society of American (ESA) Statistical Section and Ecological Forecasting Initiative (EFI) Seminar, Jan 28th (**virtual**). |

| 2022 | **T. Qiu**. What drives the variations of seed production of global forest trees? The GeoInsider Webinar, May. 8th **(virtual)** |

| 2020 | **T. Qiu**, Tracking and forecasting the seasonal rhythms of terrestrial ecosystem: insights from remote sensing, Duke University, University Program in Ecology, Durham, NC, Sep 8th |

| 2019 | **T. Qiu,** The combined effects of urbanization and climate change on vegetation phenology in the northern mid-latitude large cities. UNC Geography Graduate Research Colloquium, Chapel Hill, NC, Mar. 21st |

| 2019 | **T. Qiu,** Extraction of Water Bodies using remotely sensed spectral signature: A case study in Wuhan City. Winston Salem, NC, Feb 27th – Mar 1st, G. Herbert Stout Award |

| 2018 | **T. Qiu,** Remote sensing as technical frontiers in understanding our environment. UNC-CH and UNC-G Joint Geography Colloquium, Chapel Hill, NC, Oct. 26th |

SCHOLARLY PRESENTATIONS

SELECTED CONFERENCE PRESENTATIONS (only first author presentations are included)

| 2023 | **T. Qiu**. How remote sensing help us understand biodiversity change? Insect-NET: AI for Ecological and Agricultural Science Symposium, Sep 15th **(talk)** |

| 2023 | **T. Qiu**, J. S. Clark. The timing of spring green-up affects tree reproduction in the temperate and boreal forests. Ecological Society of America annual meeting, Aug. 6th – 11st **(talk)** |

| 2023 | **T. Qiu**. Winners or losers under climate change? It depends on habitat. Predictive Ecology: Temporal, Spatial, or Phylogenetic Forecasting, Jun. 5th – 9th **(poster)** |

| 2022 | **T. Qiu**, A. Bell, J. J. Swenson, J. S. Clark. Habitat-trait interactions that control response to climate change: North American ground beetles (Carabidae). American Geophysical Union Fall meeting, Dec. 12th – 16th **(talk)** |

| 2022 | **T. Qiu**, A. Bell, J. J. Swenson, J. S. Clark. Habitat-trait interactions that control response to climate change: North American ground beetles (Carabidae). Ecological Society of America annual meeting, Aug. 14th – 19th **(talk)** |

| 2021 | **T. Qiu**, J. S. Clark, P. R. Townsend, J. J. Swenson, Combined LiDAR and hyperspectral imagery for landscape forest reproduction across the United States. American Geophysical Union Fall meeting, Dec 13st – 17th **(virtual poster)** |

| 2021 | **T. Qiu**, J. J. Swenson, J. S. Clark, Combined LiDAR and hyperspectral Imagery in tree reproduction and ground beetle's abundance modeling. NASA Biodiversity Forecast Team Meeting, Oct 19th – 21st **(virtual poster)** |

| 2021 | **T. Qiu,** B. Courbaud, V. Journe, G. Kunstler, C. L. Scher, J. J. Swenson, J. S. Clark, Global analysis of reproductive investment in trees: effects of soil nutrients, species traits, and phylogeny. Ecological Society of America annual meeting, Aug. 2rd – 5th **(virtual talk)** |

| 2020 | **T. Qiu,** C. Kilner, J. J. Swenson, J. S. Clark, Dynamic response of ground beetles to climate change and habitat characteristics. American Geophysical Union Fall meeting, Dec 11st – |

16th (**virtual talk**)

2020   **T. Qiu,** C. L. Scher, M. E. Swift, J. J. Swenson, J. S. Clark, Capturing emergent interactions that govern food web dynamics with climate change. Ecological Society of America annual meeting, Aug 3rd – 6th (**virtual talk**)

2019   **T. Qiu,** C. Song, B. Seyednasrollah, N. Rathnayaka, A Bayesian hierarchical space-time model in characterizing the impacts of climate change and extreme weather events on land surface phenology. American Geophysical Union Fall meeting, Dec 9th – 13th (**Poster**)

2018   **T. Qiu,** C. Song, Y. Zhang, and H. Liu, Characterizing the impacts of urbanization and climate change on land surface phenology in the Northern Hemisphere. American Geophysical Union Fall Meeting, Washington, DC, Dec. 10th – 14th (**poster**)

2018   **T. Qiu,** C. Song, Y. Zhang, and H. Liu, How urban vegetation responded to land use change and climate change? UNC 6th Annual Climate Change & Resilience Symposium, Chapel Hill, NC, Apr. 12th (**poster**)

2018   **T. Qiu,** C. Song, Using Google Earth Engine to estimate impervious surface area in the U.S. big cities. 1st UNC Google Earth Engine Symposium, Chapel Hill, NC, Jul. 27th (**talk**)

2017   **T. Qiu,** C. Song, Understanding the effects of urban expansion on spatio-temporal variations of vegetation phenology at global scale from 1993 to 2014. American Geophysical Union 2017 Fall Meeting, New Orleans, LA, Dec. 11th – 15th (**talk**)

2017   **T. Qiu,** C. Song, J. Li, Spatial-temporal patterns of landscape phenology in the urban vegetation and the surrounding agricultural regions. 2017 Annual Meeting of the American Association of Geographers, Boston, MA, Apr. 5th – 9th (**talk**)

2017   **T. Qiu,** C. Song, J. Li, Impacts of landscape metrics on vegetation phenology over the past three decades. UNC 3rd Annual Climate Change & Resilience Symposium, Chapel Hill, NC, Mar. 21st (**poster**)

2016   **T. Qiu,** C. Song, J. Li, Characterizing urbanization effects on landscape phenology along a rural-urban gradient using Landsat time series data. American Geophysical Union 2016 Fall Meeting, San Francisco, CA, Dec. 12nd – 16th (**poster**)

2016   **T. Qiu,** C. Song, J. Li, Detecting spatial and temporal variation of urban phenology over the past three decades using Landsat time series data. 2nd Congress of the Society of Urban Ecology, Shanghai, China, Jul. 7th – 11th (**talk**)

HONORS & AWARDS

2023	High impact publication award in Ecosystem integration, Pennsylvania State Univ
2019	Graduate Student Transportation Grant, UNC-Chapel Hill
2019	Finalist for 3-minute Thesis Competition, UNC-Chapel Hill
2019	James Carlton Ingram Summer Research Fellowship, UNC-Chapel Hill
2019	G. Herbert Stout Award for Innovative Use of GIS
2016/17/18/19	Conference Travel Award (*five times*), Dept. of Geography, UNC-Chapel Hill
2017	Finalist in Student Honors Paper, AAG Remote Sensing Specialty Group
2016	Best Student Paper, Second Congress of the Society for Urban Ecology
2016	Best Undergraduate Thesis (3%), Hubei Province of China
2015	Presidential Fellowship, equivalent to Full-ride Scholarship (0.4%), Wuhan University

2015	Geoway Remote Sensing Academic Star (0.4%), Wuhan University
2012/13/14	National Fellowship (2%, *three times*), Ministry of Education of China
2012/13/14	First-Class Scholarship (5%, *three times*), Wuhan University
2013/14	Pacemaker for Outstanding Student (0.4%, *two times)*, Wuhan University
2012/13/14	Outstanding Student (5%, *three times*), Wuhan University
2013/14	Outstanding Engineer Fellowship (10%, awarded a summer school study in the U.K.)
2013	Best Group Presentation (10%), The University of Cambridge
2012	National Undergraduate Innovative Fellowship (2%), Wuhan University

PROFESSIONAL DEVELOPMENT

<u>Workshop</u>
2023	Continent-wide forest recruitment change (May 1st – May 4th, SERC, US)
2022	Bottom-up controls on consumers & food webs (November 16th – 18th, INRAE, Grenoble)

SERVICE

<u>MENTORING</u>
Postdoctoral scholar:
    Dr. Xiaolu Li (2023 –)
Ph.D. Students Adviser:
    Ms. Hanshi Chen (Ecology, 2023 –)
    Ms. Wei Yu (Ecosystem Science and Management, 2023 –)
Undergraduate students:
    Mr. Finan Turnage-Barney (Geography, 2023 –)
    Mr. Evan Hackett (Forestry, 2023 Summer)

<u>GRADUATE COMMITTEE</u>
Casey W. Hamilton (Geography, Ph.D. Committee Member)
Chyvonne Jessick (Ecology, Ph.D. Committee Member)
Samantha A Allbee (Ecology, MA Committee Member)
Hannah Klim (Wildlife and Fisheries, MA Committee Member)

<u>SERVICE TO THE DISCIPLINE</u>
2023 –	Elected Vice Chair, Statistical Ecology Section, Ecological Society of America
2023 fall	Co-Convener and Co-Chair, B21: Ecological Forecasting in the Earth System at Fall Meeting, American Geophysical Union

<u>SERVICE TO PENN STATE</u>
2023 –	Qualify Exam Committee, Intercollege Graduate Degree in Ecology, Penn State
2023 –	Scholarship Committee, Department of Ecosystem Science and Management

<u>Ad-hoc JOURNAL REVIEWER</u>
Nature Ecology & Evolution (1), PNAS (2), Ecology Letters (3), Global Change Biology (1), Remote sensing of environment (5), Agricultural and Forest Meteorology (8), ISPRS Journal of Photogrammetry and Remote sensing (1), Journal of Ecology (2), Ecological Applications (1), Remote sensing (22), Forests (22), Science of the Total Environment (3), Global and Planetary Change (1), Frontiers in Environmental Science (1), Frontiers in Ecology and Evolution (1), Journal of Forestry Research (1),

Journal of Marine Science and Engineering (1), Plos One (2), Sustainability (1), PeerJ (1), Frontiers in Artificial Intelligence (1), Plant Ecology (1)

Update: 11/20/2023