

# CURRICULUM VITAE

**Libo Tan, PhD**

**Associate Professor**

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## **Education**

- 2013 **Ph.D. in Nutritional Sciences**  
Department of Nutritional Sciences, **The Pennsylvania State University**
- 2007 **Bachelor in Biological Sciences**  
College of Life Science, **Shandong University**

## **Professional Experience**

- 2021- **Associate Professor**, Department of Human Nutrition and Hospitality Management, **The University of Alabama**, Tuscaloosa, AL
- 2014-2021 **Assistant Professor**, Department of Human Nutrition and Hospitality Management, **The University of Alabama**, Tuscaloosa, AL
- 2013-2014 **Postdoctoral Fellow**, Department of Nutritional Sciences, **The Pennsylvania State University**, University Park, PA

## **Certificates**

- QM Teaching Online Certificate, Quality Matters (August 2022)
- UF SEC Certificate in Multicultural Mentoring, SEC (March 2022)

## **Scholarly Training**

- 2020 **Grant Writing Institute**, University of Alabama
- 2019 **CCTS Translational Training Symposium**, Center for Clinical and Translational Science, University of Alabama at Birmingham
- 2014-2015 **NIH Junior Investigator's Program**, University of Alabama
- 2012 **Training as Nutrition Evidence Analysis Abstractor**, Center for Nutrition Policy and Promotion, United States Department of Agriculture
- 2012 **WinSAAM Workshop**, University of Pennsylvania

## **Research Focus**

Bioavailability, pharmacokinetics, and biological activities of **micronutrients and phytochemicals**, particularly those associated with neonatal development, adipose tissue metabolism, or glucose homeostasis

- Investigate impacts of various physiological or diseased states on the pharmacokinetics and bioactivities.
- Explore potential techniques that may improve the bioavailability and/or optimize the bioactivities.

## **Research Funding**

2023-2025	USDA-NIFA. Developing Lutein Emulsion-Based Formula for Supporting Early-Life Health. Tan L (PI)
2022-2023	USDA Specialty Crop Block Grant Program. Preharvest and Postharvest Intervention to Improve Tomato Quality and Safety from Bacterial Infections. Tan L (co-PI)
2022-2023	Sigma Xi Grants in Aid of Research. Using Advanced Lutein Delivery Method for Inhibiting Retinopathy of Prematurity – A Preclinical Study in Sprague-Dawley Rats. Tan L (PI)
2020-2022	USDA Specialty Crop Block Grant Program. Promote Child and Adult Nutrition Knowledge and Consumption of Pecans. Tan L (PI)
2016-2020	NIH/NICHHD R01. Vitamin A Supplementation and Retinol Metabolism in the Neonatal Period. Tan L (Subaward PI)
2019-2021	USDA Specialty Crop Block Grant Program. Establish “International Microgreen Growers Association” to Provide Solid Foundation to Promote Specialty Crops of Microgreens. Tan L (co-PI)
2018-2019	USDA Specialty Crop Block Grant Program. Postharvest Interventions to Improve Nutritional Quality of Microgreens. Tan L (co-PI; 50% effort)
2019-2021	UA ORED Internal Funding Small Grant Program. Age-Mediated Pharmacokinetics of Lutein in Rats. Tan L (PI)
2015-2016	Mary A. Crenshaw Endowed Research Fund. Model-Based Compartmental Analysis of the Effects of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) on Vitamin A Kinetics in Rats. Tan L (PI)
2015-2016	SEC Faculty Visiting Travel Grant. Tan L (PI)

## **Peer-Reviewed Publications**

(underline denotes student; \* denotes corresponding author)

1. Zhang Y and \***Tan L.** (2023). Maternal high-fat diet consumption in Sprague Dawley rats compromised the availability and altered the tissue distribution of lutein in neonatal offspring. *Metabolites*. Accepted.
2. Guo J, Brown P, **Tan L**, and Kong L. (2023). Effect of resistant starch consumption on appetite and satiety: a review. *Journal of Agriculture and Food Research*. Accepted.
3. Liu S, Kong L, Huang T, Wei X, **Tan L**, Luo H, and Zhang H. (2023). Encapsulation in amylose inclusion complex enhances the stability and release of vitamin D. *Nutrients*. Accepted.
4. Guo J, Gutierrez A, **Tan L**, and Kong L. (2023). Considerations and strategies for optimizing health benefits of resistant starch. *Current Opinion in Food Science*. Accepted.
5. Tong X, Szacilo A, Chen H, **Tan L**, and Kong L. (2022). Using rich media to promote knowledge on nutrition and health benefits of pecans among young consumers. *Journal of Agriculture and Food Research*. Accepted.
6. Guo J, \***Tan L**, and \*Kong L. (2022). Multiple levels of health benefits from resistant starch. *Journal of Agriculture and Food Research*. <https://doi.org/10.1016/j.jafr.2022.100380>.
7. \***Tan L**, Zhang Y, Wang H, and Haberer H. (2022). Retinoic acid promotes tissue vitamin A status and modulates adipose tissue development of neonatal rats exposed to maternal high-fat diet-induced obesity. *Journal of Nutritional Science*. doi: 10.1017/jns.2022.53.
8. Gutierrez A, Guo J, **Tan L**, and Kong L. (2021). Inhibitory effect of ascorbic acid on in vitro enzymatic digestion of raw and cooked starches. *Frontiers in Nutrition*. doi: 10.3389/fnut.2021.758367.
9. Senkus KE, Zhang Y, Wang H, #**Tan L**, #Crowe-White KM. (2021). Lycopene supplementation of maternal and weanling high fat diets influences adipose tissue development and metabolic outcomes of Sprague-Dawley offspring. *Journal of Nutritional Science*. doi: 10.1017/jns.2021.91. (#: co-anchor authors)
10. Zhang Y, Knol LL, and \***Tan L**. (2021). Association between dietary lutein/zeaxanthin intake and metabolic syndrome among U.S. females: an analysis of National Health and Examination years 2015-2018. *Current Developments in Nutrition*. <https://doi.org/10.1093/cdn/nzab123>.
11. Zhang Y, Xiao Z, Ager E, Kong L, and \***Tan L**. (2021). Nutritional quality and health benefits of microgreens, a crop of modern agriculture. *Journal of Future Foods*. <https://doi.org/10.1016/j.jfutfo.2021.07.001>.

12. Wang Y, Zhang Y, Guan L, Wang S, Zhang J, Tan L, Kong L, and Zhang H. (2021). Lipophilization and amylose inclusion complexation enhance the stability and release of catechin. *Carbohydrate Polymers*. In Press.
13. Zhang Y, Kong L, and \*Tan L. (2020). Effectiveness of nanoscale delivery systems on improving the bioavailability of lutein in rodent models: a systematic review. *Critical Reviews in Food Science and Nutrition*. doi: 10.1080/10408398.2020.1853035. [Epub ahead of print]
14. Gutierrez A, Feng J, \*Tan L, and \*Kong L. (2020). Inhibitory effect of four types of tea on the in vitro enzymatic digestion of starch. *Food Frontiers*. doi: 10.1002/fft2.39. [Epub ahead of print]
15. \*Tan L, Zhang Y, Crowe-White KM, Senkus KE, Erwin M, and Wang H. (2020). Vitamin A supplementation during suckling and post-weaning periods attenuates the adverse metabolic effects of maternal high fat diet consumption in Sprague-Dawley rats. *Current Developments in Nutrition*. <https://doi.org/10.1093/cdn/nzaa111>.
16. Chen H, Tong X, #Tan L, and #Kong L. (2020). Consumers' acceptability and perceptions toward the consumption of hydroponically and soil grown broccoli microgreens. *Journal of Agriculture and Food Research*. 2:100051. (#: co-anchor authors as the funding source)
17. Senkus KE, Tan L, and Crowe-White KM. (2020). Systemic and adipose tissue redox status in Sprague-Dawley rats fed normal and high fat diets supplemented with lycopene. *Journal of Medicinal Food*. doi: 10.1089/jmf.2020.0064. [Epub ahead of print]
18. Zhang Y, Crowe-White KM, Kong L, and \*Tan L. (2020). Vitamin A status and deposition in neonatal and weanling rats reared by mothers consuming normal and high fat diets with adequate or supplemented vitamin A. *Nutrients*. 12(5):1460.
19. Zhang Y, Gladden I, Guo J, Tan L, and Kong L. (2020). Enzymatic digestion of amylose and high amylose maize starch inclusion complexes with alkyl gallates. *Food Hydrocolloids*. 108:106009
20. Guo J, \*Tan L, and \*Kong L. (2020). Impact of dietary intake of resistant starch on obesity and associated metabolic profiles in human: A systematic review of the literature. *Critical Reviews in Food Science and Nutrition*. doi: 10.1080/10408398.2020.1747391. [Epub ahead of print]
21. \*Tan L, Nuffer H, Feng J, Kwan S, Chen H, Tong X, and Kong L. (2020). Antioxidant properties and sensory evaluation of microgreens from commercial and local farms. *Food Science and Human Wellness*. 9(1):45-51.
22. Gutierrez A, Guo J, Feng J, \*Tan L, and \*Kong L. (2020). Inhibition of starch digestion by gallic acid and alkyl gallates. *Food Hydrocolloids*. 102:105603

23. Wang S, Kong L, Zhao Y, **Tan L**, Zhang J, Du Z, and Zhang H. (2019). Lipophilization and molecular encapsulation of p-coumaric acid by amylose inclusion complex. *Food Hydrocolloids*. 93:270-275.
24. **Tan L** and Kong L. (2019). Starch-guest inclusion complexes: formation, structure, and enzymatic digestion. *Critical Reviews in Food Science and Nutrition*. 1-11.
25. Senkus KE, **Tan L**, and Crowe-White KM. (2019). Lycopene and metabolic syndrome: a systemic review of the literature. *Advances in Nutrition*. 10(1):19-29.
26. Yuan S, Zhang Y, Liu J, Zhao Y, **Tan L**, Liu, J, Wang Q, and Zhang H. (2019). Structure-affinity relationship of the binding of phenolic acids and their derivatives to bovine serum albumin, and effects on antioxidant activity. *Food Chemistry*. 278:77-83.
27. Wei J, Yin X, Liu Q, **Tan L**, and Jia C. (2018). Association between hypertension and cognitive function: A cross-sectional study in people over 45 years old in China. *Journal of Clinical Hypertension*. 20(11):1575-1583.
28. Hodges JK, **Tan L**, Green MH, and Ross AC. (2017). Vitamin A and retinoic acid combined have a more potent effect compared to vitamin A alone on the uptake of retinol into extrahepatic tissues of neonatal rats raised under vitamin A-marginal conditions. *Current Developments in Nutrition*. 1(12).
29. Hodges JK, **Tan L**, Green MH, and Ross AC. (2017). Vitamin A supplementation redirects the flow of retinyl esters from peripheral to central organs of neonatal rats raised under vitamin A-marginal conditions. *American Journal of Clinical Nutrition*. 105(5):1110-1121.
30. **Tan L**, Babbs AE, Green MH, and Ross AC. (2016) Direct and indirect vitamin A supplementation strategies result in different plasma and tissue retinol kinetics in neonatal rats. *The Journal of Lipid Research*. 57(8):1423-34.
31. Hodges JK, **Tan L**, Green MH, and Ross AC. (2016). Vitamin A supplementation transiently increases retinol concentrations in extrahepatic organs of neonatal rats raised under vitamin A-marginal conditions. *The Journal of Nutrition*. 146(10):1953-1960.
32. Hodges JK, **Tan L**, Green MH, and Ross AC. (2016). Vitamin A supplementation increases the uptake of chylomicron retinyl esters into the brain of neonatal rats raised under vitamin A-marginal conditions. *The Journal of Nutrition*. 146(9):1677-83.
33. **Tan L**, Green MH, and Ross AC. (2015) Vitamin A kinetics in neonatal rats vs. adult rats: comparison based on model-based compartmental analysis. *The Journal of Nutrition*. 145(3): 403-410.
34. **Tan L**, Wray AE, Green MH, and Ross AC. (2014). Compartmental modeling of whole-body vitamin A kinetics in unsupplemented and vitamin A-retinoic acid supplemented neonatal rats. *The Journal of Lipid Research*. 55(8): 1738-1749.

35. **Tan L**, Wray AE, Green MH, and Ross AC. (2014). Retinol kinetics in unsupplemented and vitamin A-retinoic acid supplemented neonatal rats: A preliminary model. *The Journal of Lipid Research*. 55(6):1077-1086.
36. **Tan L**, Wray AE, and Ross AC. (2012). Oral vitamin A and retinoic acid supplementation stimulate antibody production and splenic Stra6 expression in tetanus toxoid-immunized mice. *The Journal of Nutrition*. 142(8):1590-5.

### ***Ongoing***

Guo J, Ellis AC, Zhang Y, \*Kong L, and \***Tan L**. (2023). Starch-ascorbyl palmitate inclusion complex, a novel type 5 resistant starch, reduced in vitro starch digestibility and improved in vivo glycemic response in mice. *Carbohydrate Polymers*. Under Review.

Szacilo A, Tong X, **Tan L**, Chen H, and Kong L. (2022). The role of information quality in designing effective nutrition education programs for pecans. *Food Innovation and Advances*. Under Review.

### **Non-Indexed Publications**

Haberer H, Zhang Y, Wang H, and \***Tan L**. (2021). Oral retinoic acid treatments modulate adipose tissue development of neonatal offspring of Sprague-Dawley rats consuming a high fat diet. *Journal of Science and Health at the University of Alabama (JOSHUA)*. Accepted.

Gladden L, Zhang Y, Guo J, **Tan L**, and Kong L. (2020). Enzymatic digestion of starch inclusion complexes with alkyl gallates. *Journal of Science and Health at the University of Alabama (JOSHUA)*. 17:20-26.

Gutierrez A, Guo J, Feng J, **Tan L**, and Kong L. (2020). Inhibitory effect of ascorbic acid on in vitro enzymatic digestion of raw and cooked starch. *Journal of Science and Health at the University of Alabama (JOSHUA)*. 17:45-49

Gutierrez A, Feng J, **Tan L**, and Kong L. (2019). Inhibitory effect of tea on the in vitro enzymatic digestion of starch. *Journal of Science and Health at the University of Alabama (JOSHUA)*. 16:29-33.

### **Web-based Peer-Reviewed Publications**

Higdon J, Drake VJ, Delage B, Ross AC, and **Tan L**. (2015). Vitamin A. *Micronutrient Information Center, Linus Pauling Institute, Oregon State University*.  
<https://lpi.oregonstate.edu/mic/vitamins/vitamin-A>

## **Book Chapters**

**Tan L** and Ross AC. (2021). Vitamin A deficiencies and excess, In: **Nelson's Textbook of Pediatrics**, 21st Edition, Chapter 45, Kliegman RM, Stanton BF, St. Geme J, Schor N, eds. Elsevier, Inc. Philadelphia, PA. In Press.

**Tan L** and Ross AC. (2020). Vitamin A Metabolism in the fetus and neonate, In: **Fetal and Neonatal Physiology**, 6th Edition, Chapter 31, Polin R, Abman S, Benitz W, Rowitch D, eds. Elsevier, Inc. Philadelphia, PA. In Press.

Ross AC, **Tan L**, and Owusu S. (2016). Vitamin A Metabolism in the fetus and neonate, In: **Fetal and Neonatal Physiology**, 5th Edition, Chapter 31, Polin R, Abman S, Benitz W, Rowitch D, eds. Elsevier, Inc. Philadelphia, PA.

Ross AC and **Tan L**. (2015). Vitamin A deficiencies and excess, In: **Nelson's Textbook of Pediatrics**, 20th Edition, Chapter 45, Kliegman RM, Stanton BF, St. Geme J, Schor N, eds. Elsevier, Inc. Philadelphia, PA.

## **Peer-Reviewed Published Abstracts**

(underline denotes students; \* denotes corresponding/senior author)

Zhang Y, **Tan L**. (2022). Tissue distribution of lutein in neonatal Sprague-Dawley rats reared by mothers consuming a normal- or a high fat diet. Oral presentation. ***Current Developments in Nutrition***. Nutrition 6 (Supplement\_1), 70-70.

Zhang Y, Kong, L, **Tan L**. (2022). Biopolymer stabilized emulsions improved storage stability and *in vitro* bioaccessibility of lutein. ***Current Developments in Nutrition***. 6 (Supplement\_1), 69-69.

Guo J, Zhang Y, Kong, L, **Tan L**. (2022). *In vitro* starch digestibility and *in vivo* glycemic response of starch inclusion complexes produced with different methods and hydrothermal treatments. ***Current Developments in Nutrition***. 6 (Supplement\_1), 442-442.

Zhang Y, Li S, Kong L, and **Tan L**. (2021). Applying Pickering emulsions stabilized by octenylsuccinylated starch and gum Arabic as lutein carriers to improve its stability. ***Current Developments in Nutrition***. 5 (Supplement\_2), 887-887.

Zhang Y, Knol LL, **Tan L**. (2021). Association between dietary lutein/zeaxanthin intake and metabolic syndrome among U.S. females: An analysis of National Health and Examination Survey 2015-2018. ***Current Developments in Nutrition***. 5 (Supplement\_2), 82-82.

\***Tan L**, Wang H, and Zhang Y. (2020). Repeated retinoic acid treatments modulate adipose tissue development of neonatal rats reared by mothers consuming a high fat diet. ***Current Developments in Nutrition***. 4(Supplement\_2):131

Zhang Y, Crowe-White KM, Kong L, and \***Tan L**. (2020). Vitamin A status in neonatal and weanling rats reared by mothers consuming normal and high fat diets with or without vitamin A supplementation. *Current Developments in Nutrition*. 4(Supplement\_2):135

Zhang Y, Senkus KE, Crowe-White KM, and \***Tan L**. (2020). Vitamin A supplementation during suckling and post-weaning periods improves systemic and adipose tissue redox status in offspring of rats consuming a high fat diet. *Current Developments in Nutrition*. 4(Supplement\_2):134

Senkus KE, Zhang Y, **Tan L**, and Crowe-White KM (2020). Differential effects of lycopene supplementation on adipose tissue development and redox status in weanling offspring of rats consuming a high fat diet. *Current Developments in Nutrition*. 4(Supplement\_2):470

Guo J, Gutierrez A, Feng J, **Tan L**, and Kong L. (2020). Inhibition of starch digestion by gallic acid and alkyl gallates. *Current Developments in Nutrition*. 4(Supplement\_2):753

Kwan SH, Senkus KE, Crowe-White KM, and \***Tan L**. (2019). Maternal vitamin A supplementation modulates adipose tissue development in offspring of rats consuming a high-fat diet. *Current Developments in Nutrition*. 3(Supplement\_1)

Senkus KE, Kwan SH, **Tan L**, and Crowe-White KM. (2019). Adipose tissue development and metabolic profile of neonatal and weanling Sprague-Dawley rats in response to a maternal high fat diet supplemented with lycopene. *Current Developments in Nutrition*. 3(Supplement\_1)

Senkus KE, **Tan L**, and Crowe-White KM. (2019). Systemic and adipose tissue redox balance in Sprague-Dawley rats fed standard fat and high fat diets supplemented with lycopene. *Current Developments in Nutrition*. 3(Supplement\_1)

Stumpf A, Broman K, Senkus KE, **Tan L**, Crowe-White KM, and Park H. (2019). Lycopene protects cortical neurons via oxidative stress-mediated  $\Delta$ -bcl-xl formation. *Current Developments in Nutrition*. 3(Supplement\_1)

Senkus KE, **Tan L**, and Crowe-White KM. (2018). Relationship between lycopene and metabolic syndrome. *Journal of the Academy of Nutrition and Dietetics*. 118(9):A91

Li Y, Green MH, **Tan L**, and Ross AC. (2017). Hepatic uptake of vitamin A is independent of retinoic acid pretreatment in neonatal rats. *The FASEB Journal*. 31: 635.11.

Hodges J, **Tan L**, Green MH, and Ross AC. (2017). Vitamin A supplementation redirects the flow of retinyl esters from peripheral to central organs in neonatal rats raised under vitamin A-marginal conditions. *The FASEB Journal*.

Li Y, Urbanek J, Green MH, **Tan L**, and Ross AC. (2016). Retinoic acid pretreatment promotes vitamin A accumulation in the lung of neonatal rats. *The FASEB Journal*. 30: 689.13.

Urbanek J, **Tan L**, Green MH, and Ross AC. (2016). Vitamin A supplementation only transiently increases retinol concentrations in extrahepatic organs of neonatal rats raised under vitamin A-marginal conditions. *The FASEB Journal*. 30: 34.5.



Urbanek J, **Tan L**, Ross AC, and Green MH. (2015). The uptake of vitamin A into the neonatal brain. *The FASEB Journal*. 29: 32.1.

**Tan L**, Green MH, and Ross AC. (2014). The effects of vitamin A and retinoic acid supplementation to neonatal rats or dietary vitamin A supplementation to lactating mothers on vitamin A metabolism and kinetics in neonatal rats. *The FASEB Journal*. 28: 645.20.

Urbanek J, **Tan L**, Ross AC, and Green MH. (2014). Vitamin A supplementation promotes the uptake and tissue storage of vitamin A in a kinetic study of neonatal rats. *The FASEB Journal*. 28: 645.21.

**Tan L**, Green MH, and Ross AC. (2013). Model-based compartmental analysis of vitamin A kinetics in vitamin A-supplemented neonatal rats predicts extensive recycling and altered inter-compartmental exchange rates. *The FASEB Journal*. 27: 38.7.

**Tan L**, Wray AE, Green MH, and Ross AC. (2012). Development of a whole-body model of vitamin A metabolism in neonatal rats treated with oil or vitamin A and retinoic acid (VARA) based on compartmental analysis of retinol tracer kinetics. *The FASEB Journal*. 26: 1014.6.

**Tan L** and Ross AC. (2011). The kinetics and regulation of Stra6 expression in spleen and antibody production in tetanus toxoid-immunized mice. *The FASEB Journal*. 25: 784.4.

## **Presentations**

Peer-Reviewed (underline denotes student)

### ***International***

**Tan L**. (2023). Biopolymer stabilized emulsions improved the storage stability, in vitro bioaccessibility, and in vivo bioavailability of lutein in neonatal rats. Oral presentation. Carotenoids Gordon Research Conference. Ventura, CA. (**Invited Talk**)

Zhang Y, Kong, L, **Tan L**. (2022). Biopolymer stabilized emulsions improved the storage stability, in vitro bioaccessibility, and in vivo bioavailability of lutein in neonatal rats. Oral presentation. The Fourth NACAN Summit Frontiers in Nutrition 2022. (**Student Award**)

Guo J, Zhang Y, Kong, L, **Tan L**. (2022). In vitro Digestion Kinetics and in vivo Glycemic Response of Starch Inclusion Complex. Oral presentation. The Fourth NACAN Summit Frontiers in Nutrition 2022.

Zhang Y, **Tan L**. (2022). Tissue distribution of lutein in neonatal Sprague-Dawley rats reared by mothers consuming a normal- or a high fat diet. Oral presentation. Virtual International Conference on Carotenoids 2022. (**Outstanding Presentation Award**)

Zhang Y, Kong, L, **Tan L**. (2022). Biopolymer stabilized emulsions improved storage stability and *in vitro* bioaccessibility of lutein. Oral presentation. Virtual International Conference on Carotenoids 2022.

**Tan L**, Green MH, and Ross AC. (2013). Tracking the metabolism of vitamin A in neonates using a mathematical modeling approach. Oral presentation. The 11th China Nutrition Science Conference & International DRIs Summit, Hangzhou, China.

### *National*

Zhang Y, **Tan L**. (2022). Tissue distribution of lutein in neonatal Sprague-Dawley rats reared by mothers consuming a normal- or a high fat diet. Oral presentation. American Society for Nutrition 2022 Live Online. (**Emerging Leaders in Nutrition Science Finalist**).

Zhang Y, Kong, L, **Tan L**. (2022). Biopolymer stabilized emulsions improved storage stability and *in vitro* bioaccessibility of lutein. Poster presentation. American Society for Nutrition 2022 Live Online.

Guo J, Zhang Y, Kong, L, **Tan L**. (2022). In vitro Starch Digestibility and in vivo Glycemic Response of Starch Inclusion Complexes Produced with Different Methods and Hydrothermal Treatments. Poster presentation. American Society for Nutrition 2022 Live Online.

Zhang Y and **Tan L**. (2021). Vitamin A supplemented during suckling and post-weaning periods attenuates the adverse metabolic effects of maternal high fat diet consumption in Sprague-Dawley rats. Oral presentation. The 2<sup>nd</sup> Annual North America Chinese Society for Nutrition Summit.

Guo J, Gutierrez A, **Tan L**, and Kong L. (2021). Inhibitory effect of vitamin C and its derivative on in vitro enzymatic digestion of raw and cooked starches. Oral presentation. The 2<sup>nd</sup> Annual North America Chinese Society for Nutrition Summit.

Zhang Y, Knol LL, **Tan L**. (2021). Association between dietary lutein/zeaxanthin intake and metabolic syndrome among U.S. females: An analysis of National Health and Examination Survey 2015-2018. Oral presentation. Nutrition 2021 Live Online. (**Graduate Student Research Award Finalist; Emerging Leaders in Nutrition Science**)

Zhang Y, Li S, Kong L, and **Tan L**. (2021). Applying Pickering emulsions stabilized by octenylsuccinylated starch and gum Arabic as lutein carriers to improve its stability. Poster presentation. Nutrition 2021 Live Online. (**Emerging Leaders in Nutrition Science**)

Guo J, Gutierrez A, Zhang Y, Gladden I, **Tan L**, and Kong L. (2020). Increasing resistant starch content by dietary phenolic compounds. Oral presentation. The North America Chinese Society for Nutrition Summit Frontiers in Nutrition.

**Tan L**, Wang H, and Zhang Y. (2020). Repeated retinoic acid treatments modulate adipose tissue development of neonatal rats reared by mothers consuming a high fat diet. Poster presentation. Nutrition 2020 Live Online.

Zhang Y, Crowe-White KM, Kong L, and **Tan L**. (2020). Vitamin A status in neonatal and weanling rats reared by mothers consuming normal and high fat diets with or without vitamin a supplementation. Oral and Poster presentation. Nutrition 2020 Live Online. (**Emerging Leaders in Nutrition Science Finalist**)

Zhang Y, Senkus KE, Crowe-White KM, and **Tan L**. (2020). Vitamin A supplementation during suckling and post-weaning periods improves systemic and adipose tissue redox status in offspring of rats consuming a high fat diet. Oral and Poster presentation. Nutrition 2020 Live Online. (**Emerging Leaders in Nutrition Science Finalist**)

Senkus KE, Zhang Y, **Tan L**, and Crowe-White KM (2020). Differential effects of lycopene supplementation on adipose tissue development and redox status in weanling offspring of rats consuming a high fat diet. Oral and Poster presentation. Nutrition 2020 Live Online.

Guo J, Gutierrez A, Feng J, **Tan L**, and Kong L. (2020). Inhibition of starch digestion by gallic acid and alkyl gallates. Poster presentation. Nutrition 2020 Live Online.

Zhang Y, Guo J, **Tan L**, and Kong L. (2019). Molecular encapsulation of bioactive compounds by starch-guest inclusion complex. Oral presentation. American Chemistry Society National Meeting, San Diego, CA.

Kwan SH, Senkus KE, Crowe-White KM, and **Tan L**. (2019). Maternal vitamin A supplementation modulates adipose tissue development in offspring of rats consuming a high-fat diet. Oral and Poster presentation. Nutrition 2019, Baltimore, ML.

Senkus KE, **Tan L**, and Crowe-White KM. (2019). Systemic and adipose tissue redox balance in Sprague-Dawley rats fed standard fat and high fat diets supplemented with lycopene. Oral presentation. Nutrition 2019, Baltimore, ML.

Senkus KE, **Tan L**, and Crowe-White KM. (2019). Adipose Tissue Development and Metabolic Profile of Neonatal and Weanling Sprague-Dawley Rats in Response to a Maternal High Fat Diet Supplemented with Lycopene. Nutrition 2019, Baltimore, ML.

Stumpf A, Broman K, Senkus KE, **Tan L**, Crowe-White KM, and Park H. (2019). Lycopene protects cortical neurons via oxidative stress-mediated  $\Delta$ -bcl-xl formation. Poster presentation. Nutrition 2019, Baltimore, ML.

Kwan SH, Feng J, Meza G, Tiong HK, Kong L, and **Tan L**. (2019). Evaluation of Nutritional Quality and Microbial Safety of Microgreens from Commercial and Local Organic Farms. Poster presentation. IFT 2019, New Orleans, LA.

Senkus KE, **Tan L** and Crowe-White K. (2018). Relation between Lycopene and Metabolic Syndrome. Poster presentation. FNCE 2018, Washington DC.

Senkus KE, **Tan L** and Crowe-White K. (2018). Lycopene Attenuates High-Fat Diet-Induced Oxidative Stress in Sprague-Dawley Rats. Poster presentation. Nutrition 2018, Boston, MA.

Li Y, Wei CH, Hodges J, Green, M, **Tan L** and Ross AC. (2018). Intestinal Uptake of Vitamin A is Stimulated by Retinoic Acid Pretreatment in Neonatal Rats. Poster presentation. FASEB 4th International Conference on Retinoids, Steamboat Springs, CO.

Hodges J, **Tan L**, MH Green and Ross AC. (2017). Vitamin A Supplementation Redirects the Flow of Retinyl Esters from Peripheral to Central Organs in Neonatal Rats Raised under Vitamin A-Marginal Conditions. Poster presentation. The Experimental Biology 2017, Chicago, IL.

Li Y, Green MH, **Tan L**, and Ross AC. (2017). Hepatic Uptake of Vitamin A is Independent of Retinoic Acid Pretreatment in Neonatal Rats. Poster presentation. The Experimental Biology 2017, Chicago, IL.

Ross AC, Green MH and **Tan L**. (2016). Neonatal versus maternal vitamin A supplementation – different effects on neonatal retinol kinetics. Oral presentation. FASEB 3rd International Conference on Retinoids, Palm beach, FL.

Urbanek J, **Tan L**, Ross AC, and MH Green. (2016). The transient effect of vitamin A supplementation on tissue levels in a neonatal rat model. Poster presentation. FASEB 3rd International Conference on Retinoids, Palm beach, FL.

Urbanek J, **Tan L**, Ross AC, and MH Green. (2016). Vitamin A supplementation transiently increases retinol concentrations in extrahepatic organs of neonatal rats raised under vitamin A-marginal conditions. Oral presentation. The Experimental Biology 2016, San Diego, CA.

Li Y, Urbanek J, Green MH, **Tan L**, and Ross AC. (2016). Retinoic acid pretreatment promotes vitamin A accumulation in the lung of neonatal rats. Poster presentation. The Experimental Biology 2016, San Diego, CA.

Urbanek J, **Tan L**, Ross AC, and MH Green. (2015). The uptake of vitamin A into the neonatal brain. Oral and poster presentation. The Experimental Biology 2015, Boston, MA.

**Tan L**, Green MH, and Ross AC. (2014). Vitamin A and retinoic acid (VARA) supplementation to neonatal rats or dietary vitamin A supplementation to lactating mothers differentially affect vitamin A status and kinetics in neonatal rats. Poster presentation. FASEB Retinoids Conference 2014, Chicago, IL.

**Tan L**, Green MH, and Ross AC. (2014). The effects of vitamin A and retinoic acid (VARA) supplementation to neonatal rats or dietary vitamin A supplementation to lactating mothers on vitamin A metabolism and kinetics in neonatal rats. Poster presentation. The Experimental Biology 2014, San Diego, CA.

Urbanek J, **Tan L**, Ross AC, and MH Green. (2014). Vitamin A supplementation promotes the uptake and tissue storage of vitamin A in a kinetic study of neonatal rats. Poster presentation. The Experimental Biology 2014, San Diego, CA.

**Tan L**, Green MH, and Ross AC. (2013). Model-based compartmental analysis of vitamin A kinetics in neonatal rats. Oral presentation. The Experimental Biology 2013, Boston, MA.

**Tan L**, Wray AE, Green MH, and Ross AC. (2012). Development of a compartmental model of vitamin A metabolism in neonatal rats treated with oil or vitamin A and retinoic acid (VARA). Poster presentation. FASEB Retinoids Conference 2012, Snowmass, CO.

**Tan L**, Wray AE, Green MH, and Ross AC. (2012). Development of a compartmental model of vitamin A metabolism in neonatal rats treated with oil or vitamin A and retinoic acid (VARA). Poster presentation. The Experimental Biology 2012, San Diego, CA.

**Tan L** and Ross AC. (2011). The kinetics and regulation of Stra6 expression in spleen and antibody production in tetanus toxoid-immunized mice. Poster presentation. The Experimental Biology 2011, Washington DC.

Other Presentations (underline denotes student)

Binkley L, Zhang Y, and **Tan L**. (2022). Developing High Internal Phase Lutein Emulsion to Improve the Storage Stability of Lutein. Oral presentation. University of Alabama Randall Research Scholars Live Broadcast, Tuscaloosa, AL.

Haberer H, Zhang Y, Kong L, and **Tan L**. (2022). Biopolymer Stabilized Emulsions Improved the Storage Stability of Lutein. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Kelley J, Zhang Y, **Tan L**, and Kong L (2022). Preparation and optimization of biopolymer-based lutein emulsions. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Guo J, Zhang Y, Kong L, and **Tan L**. (2022). Evaluation of digestion kinetics and glycemic index of starch inclusion complex, a novel type of resistant starch. Oral presentation. Research Symposium 2022, University of West Alabama, Livingston, AL. **(1<sup>st</sup> Place in Graduate Student Oral Presentation)**

Zhang Y, Kong L, and **Tan L**. (2022). Biopolymer stabilized emulsions improved storage stability and in vitro bioaccessibility of lutein. Oral presentation. Research Symposium 2022, University of West Alabama, Livingston, AL. **(2<sup>nd</sup> Place in Graduate Student Oral Presentation)**

Zhang Y and **Tan L**. (2022). Tissue distribution of lutein in neonatal Sprague -Dawley rats reared by mothers consuming a normal- or a high fat diet. Poster presentation. Research Symposium 2022, University of West Alabama, Livingston, AL. **(1<sup>st</sup> Place in Graduate Student Poster Presentation)**

Kelley J, Zhang Y, **Tan L**, and Kong L. (2022). Preparation and optimization of biopolymer-based lutein emulsions. Poster presentation. Research Symposium 2022, University of West Alabama, Livingston, AL.

Dawson R, Zhang Y, Kong L, and **Tan L**. (2022). The roles of lutein in visual and cognitive function across the lifespan: a comprehensive review. Poster presentation. Research Symposium 2022, University of West Alabama, Livingston, AL.

Emerson A, Zhang Y, and **Tan L**. (2021). Distribution of Lutein in Neonatal and Adult Sprague-Dawley Rats. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Zhang Y, Wang Y, Guan L, Wang S, Zhang J, **Tan L**, Kong L, Zhang H. (2021). Lipophilization and amylose inclusion complexation enhance the photostability and thermal stability of catechin. Oral presentation. Research Symposium 2021, University of West Alabama, Livingston, AL.

Zhang Y, Knol LL, **Tan L**. (2021). Dietary lutein/zeaxanthin intake is associated with lower prevalence of metabolic syndrome in U.S. females: An analysis of National Health and Examination Survey 2015-2018. Poster presentation. Research Symposium 2021, University of West Alabama, Livingston, AL. (**Graduate Poster Presentation 2<sup>nd</sup> Place**).

Ager E, Zhang Y, **Tan L**, Kong L. (2021). Reviewing the Nutritional Quality and Sensory Properties of Microgreens. Poster presentation. Research Symposium 2021, University of West Alabama, Livingston, AL.

**Tan L**, Emerson A, Zhang Y, Anderson D, and Kong L. (2020). Age-mediated Pharmacokinetics of Lutein. Poster presentation. Faculty Research Conference, Tuscaloosa, AL

Emerson A, Zhang Y, Kong L, and **Tan L**. (2020). Age-mediated Pharmacokinetics of Lutein. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Miles S, Zhang Y, Senkus KE, Crowe-White K, and **Tan L**. (2020). Vitamin A Supplementation during Suckling and Post-Weaning Periods Reduces Systemic and Adipose Tissue Oxidative Stress in Offspring of Rats Consuming a High-Fat Diet. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Haberer H, Wang H, Zhang Y, and **Tan L**. (2020). Repeated Retinoic Acid Treatments Modulate Adipose Tissue Development of Neonatal Rats Reared by Mothers Consuming a High Fat Diet. Poster presentation. University Research Symposium 2020, Livingston, AL. (*Won Second Place*)

Zhang Y, Crowe-White K, Kong L, and **Tan L**. (2020). Vitamin A Status in Neonatal and Weanling Rats Reared by Mothers Consuming Normal and High Fat Diets with or without Vitamin A Supplementation. Poster presentation. University Research Symposium 2020, Livingston, AL.

Gutierrez A, Guo J, **Tan L**, and Kong L. (2020). Inhibitory Effect of Vitamin C on the in vitro Enzymatic Digestion of Raw and Cooked Starch. Poster presentation. University Research Symposium 2020, Livingston, AL.

Gladden I, Zhang Y, Guo J, **Tan L**, and Kong L. (2020). Enzymatic Digestion of Starch Inclusion Complexes with Alkyl Gallates. Poster presentation. University Research Symposium 2020, Livingston, AL.

Erwin M, Kwan SH, Senkus KE, Crowe-White K, and **Tan L**. (2019). Maternal Vitamin A Supplementation Modulates Adipose Tissue Development in Offspring of Rats Consuming a High-Fat Diet. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL. (*Won Third Place*)

Miles S, Senkus KE, Kwan SH, Crowe-White K, and **Tan L**. (2019). Adipose Tissue Development of Neonatal and Weanling Rats in Response to Maternal High Fat Diet Supplemented with Lycopene. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL. (*Won Fifth Place*)

Cooper A, Zhang Y, Kong L, and **Tan L**. (2019). Nanoencapsulation of Curcumin and  $\beta$ -carotene in Amylose Inclusion Complex. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL. (*Won Sixth Place*)

Gutierrez A, Feng J, **Tan L**, and Kong L. (2019). Inhibitory Effect of Tea on the in vitro Enzymatic Digestion of Starch. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL. (*Won Fourth Place*)

Senkus KE, **Tan L**, and Crowe-White K. (2019). Adipose Tissue Development of Neonatal and Weanling Sprague-Dawley Rats in Response to a Maternal High Fat Diet Supplemented with Lycopene. Poster presentation. University Research Symposium 2019, Livingston, AL.

Zhang Y, Kong L, and **Tan L**. (2019). Enhanced Storage Stability and Photo-stability of beta-Carotene by Nanoencapsulation using Amylose Inclusion Complex. Poster presentation. University Research Symposium 2019, Livingston, AL.

Kwan SH, Feng J, Guadalupe M, Tiong HK, Kong L, and **Tan L**. (2019). Evaluation of Nutritional Quality and Microbial Safety of Microgreens from Commercial and Local Organic Farms. Poster presentation. University Research Symposium 2019, Livingston, AL.

Senkus KE, **Tan L**, and Crowe-White K. (2019). Systemic and Adipose Tissue Redox Balance in Sprague-Dawley Rats fed Standard Fat and High Fat Diets Supplemented with Lycopene. Poster presentation. University Research Symposium 2019, Livingston, AL.

Gutierrez A, Feng J, **Tan L**, and Kong L. (2019). Inhibitory Effect of Tea on the in vitro Enzymatic Digestion of Starch. Poster presentation. University Research Symposium 2019, Livingston, AL. (*Won Dean's Award*)

Cooper A, Kong L, and **Tan L**. (2018). Effect of Encapsulation by Amylose Inclusion Complex on the Stability of Ascorbyl Palmitate. Oral presentation. University of Alabama Randall Research Scholars Live Broadcast, Tuscaloosa, AL.

Kwan SH, **Tan L**, and Kong L. (2018). Recent Developments in Starch-Guest Inclusion Complex. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Senkus KE, **Tan L**, and Crowe-White K. (2018). Lycopene and Metabolic Syndrome. Educational Studies in Psychology, Research Methodology, and Counseling Graduate Research Symposium, University of Alabama Department of Education, Tuscaloosa, AL.

Henry K and **Tan L**. (2018). Literature review on the impacts of obesity on vitamin A status and metabolism. Poster presentation. The Seventeenth Annual University of Alabama System Honors Research Conference, Tuscaloosa, AL.

Henry K and **Tan L.** (2017). Literature review on the impacts of obesity on vitamin A status and metabolism. Poster presentation. Annual Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Thompson E and **Tan L.** (2015). Vitamin A metabolism in the presence of TCDD. Oral presentation. University of Alabama's Computer-Based Honor (CBH) Program 2015 Fall Research Presentations, Tuscaloosa, AL.

### **Teaching Experience and Course Development**

**Instructor**, Department of Human Nutrition & Hospitality Management, University of Alabama

- NHM 690: Doctoral Studies Seminar
- NHM 561: Advanced Vitamins and Minerals
- NHM 562: Metabolism of Energy Nutrients
- NHM 491: Directed Professional Study
- NHM 361: Nutritional Biochemistry (On campus and Online)
- NHM 362: Nutrition at Cell Level
- NHM 102: Honors Introduction to Human Nutrition
- NHM 101: Introduction to Human Nutrition

**Course development for online delivery**, Department of Human Nutrition & Hospitality Management, University of Alabama

- NHM 361: Nutritional Biochemistry
- NHM 362: Nutrition at Cell Level
- NHM 561: Advanced Vitamins and Minerals
- NHM 562: Metabolism of Energy Nutrients

**Teaching Assistant**, Department of Nutritional Sciences, Pennsylvania State University

- NUTR 445: Metabolism of Macronutrients

### **Research Mentoring**

- Yanqi Zhang – PhD student in Human Nutrition
- Lauren Binkley – Undergraduate student in Biology
  - Advisor for the University of Alabama's Randall Research Scholars Program
- Nolan McKibben – Undergraduate student in Chemistry
  - Advisor for the University of Alabama's Randall Research Scholars Program
- Haley McAtee – Undergraduate student in Psychology
  - Advisor for the University of Alabama's Randall Research Scholars Program



- Shu Hang Kwan – Master student in Human Nutrition
- Dalton Hall – Undergraduate student in Food and Nutrition
- Abby Emerson - Undergraduate student in Biological Sciences
  - Advisor for the University of Alabama’s Emerging Scholars Program
- Heleena Haberer-Undergraduate student in Biological Sciences
- Sydney Miles – Undergraduate student in Biological Sciences
- Andrew Cooper – Undergraduate student in Mathematics
  - Advisor for the University of Alabama’s Randall Research Scholars Program
- Maddie Erwin – Undergraduate student in Biological Sciences
- Delaine Anderson – Undergraduate student in Human Performance Exercise Science
- Holly Nuffer – Undergraduate student in Food and Nutrition
- Katherine Henry – Undergraduate student in Nursing
  - Advisor for the University of Alabama’s Emerging Scholars Program
- Elena Thompson – Undergraduate student in Nursing
  - Advisor for the University of Alabama’s Computer-Based Honor Program

### **Dissertation Committee**

- Yanqi Zhang. Developing Biopolymer-based Lutein Emulsion to Improve the in vitro Bioaccessibility of Lutein and Its in vivo Bioavailability in Neonatal Rats. Committee Chair. 2021-present.
- Jiayue Guo. Differential Effects of Various Types of Resistant Starch on Improving Glycemic Response and Gut Health. Committee Member. 2020-2022.

### **Professional Activities**

#### Grant Reviewer

- Reviewer. The Council for the Earth and Life Sciences Netherlands Organisation for Scientific Research (NWO); 2015

#### Evidence Analysis Reviewer (Competitive Appointment)

- Nutrition Evidence Abstractor, Nutrition Evidence Library (NEL) of USDA Center for Nutrition Policy and Promotion; 2012 to 2017.
  - Contributed to the publication of Dietary Guideline for Americans 2015

#### Associate Editor

- Frontiers in Nutrition

### Editorial Board

- Journal of Future Foods
- Journal of Nutritional Oncology

### Guest Editor

- Journal of Visualized Experiments (JoVE)
- Frontiers in Sustainable Food System
- Metabolites

### Reviewer Board

- Foods

### Journal Reviewer

- Advances in Nutrition
- Current Developments in Nutrition
- Food Research International
- Nutrients
- The Journal of Lipid Research
- The Journal of Nutrition
- The British Journal of Nutrition
- Antioxidants
- Food Science & Nutrition
- Jornal de Pediatria (A bimonthly publication of Brazilian Society of Pediatrics)
- Molecular Nutrition & Food Science
- Journal of Nutrition & Food Sciences
- Linus Pauling Institute's Micronutrient Information Center

### Guideline Reviewer

- Health Professional's Guide to Dietary Supplements, Academy of Nutrition and Dietetics; 2020

### Abstract Reviewer

- Abstract Reviewer. Nutrition 2023 Conference; 2023
- Abstract Reviewer. Nutrition 2020 Conference; 2020
- Abstract Reviewer. Nutrition 2019 Conference; 2019
- Abstract Reviewer. Nutrition 2018 Conference; 2018

### Textbook Reviewer

- Modern Nutrition in Health and Disease; 2020

### Leadership

- **Co-Chair**, Promotion and Tenure Committee, College of Human Environmental Sciences, University of Alabama (2022-present)

- **Chair**, Committee of Membership and Communication, North America Chinese Society for Nutrition; 2014 to 2019
- **Co-Chair**, Election Committee for VP Position, North America Chinese Society for Nutrition; 2017
- **Co-Chair**, Election Committee for Leadership Group, North America Chinese Society for Nutrition; 2016

#### Professional Memberships

- Full Membership, Sigma Xi, The Scientific Research Honor Society (2023 to present)
- American Society for Nutrition (2008 to present)
- International Carotenoid Society (2013 to present)
- Institute for Food Technologists (2018 to present)
- International Society for Computational Biology (2012 to present)
- North America Chinese Society for Nutrition (2013 to present)
- The Obesity Society (2016 to present)

#### Internal Committees

- Committee Member, Prestigious Awards Committee, University of Alabama (2022-present)
- Committee Member, Research Grants Committee, University of Alabama (2022-present)
- **Co-Chair**, Promotion and Tenure Committee, College of Human Environmental Sciences, University of Alabama (2022-present)
- Committee Member, Promotion and Tenure Committee, College of Human Environmental Sciences, University of Alabama (2021-2022)
- Committee Member, Research Committee, College of Human Environmental Sciences, University of Alabama (2019-present; 2015-2016)
- **Co-Chair**, Search Committee for Associate/Full Professor Position, Department of Human Nutrition, University of Alabama (2018-2019)
- Committee Member, Graduate Program Admission Committee, Department of Human Nutrition, University of Alabama (2014-present)
- Committee Member, FEM Curriculum Development Committee, Department of Human Nutrition, University of Alabama (2019-present)
- Committee Member, Graduate Studies Committee, College of Human Environmental Sciences, University of Alabama (2014-2015)

### Judge

- Nutrition 2019 Conference, Emerging Leaders in Nutrition Science Poster Competition, 2019
- University of West Alabama 7th Undergraduate Research Symposium, 2018

### Intern

- Center for Disease Control and Prevention (CDC) of Laiwu City, China, 2006

### **Honors and Awards**

2022	Outstanding Mentorship of Undergraduate Students in Research, University of Alabama
2022	Outstanding Presentation Award, Faculty Mentor, International Conference on Carotenoids
2022	Winner Awards, Faculty Mentor, University Research Symposium, University of West Alabama
2020	Winner Award, Faculty Mentor, University Research Symposium, University of West Alabama
2019	Travel Award, Faculty Mentor, North America Chinese Society for Nutrition
2015	SECU Visiting Travel Award
2011	The Woot-Tsuen Wu Leung Scholarships in Nutrition
2004-2006	The University Scholarship Award for Academic Excellence
2005	Guang-Hua Fellowship for Academic Excellence
2004-2007	Dean's List

### **Media Appearance**

UA researchers look to extend shelf life of nutritious vegetables. (2019).

<https://www.ua.edu/news/2019/04/ua-researchers-look-to-extend-shelf-life-of-nutritious-vegetables/>

Researchers probe link between newborn health and vitamin A. (2014). ScienceDaily.

<https://www.sciencedaily.com/releases/2014/10/141030213807.htm>