

# Minn Mass Media

## Spring Meeting 2010

*Professor Devin G. Peterson Thursday, May 6th, 2010*

*“Decoding Maillard Chemistry with Mass Spectrometry”*

There will be a Spring Meeting of the Minnesota Mass Spectrometry Discussion Group on Thursday May 6th at Braun Intertec:

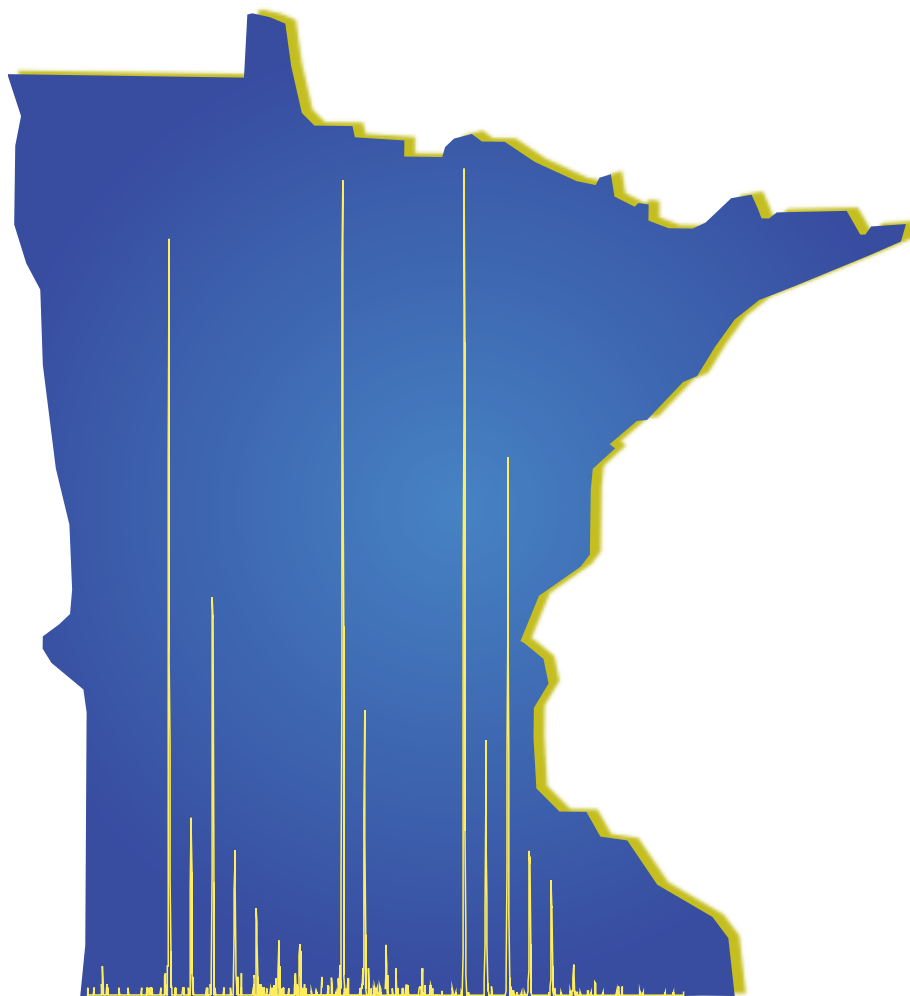
11001 Hampshire Ave. S  
Minneapolis, MN 55438

(See map on page 3)

The speaker will be Professor Devin G. Peterson of the University of Minnesota. (See his Bio and the Abstract on the following page)

Pizza and Beverages will be provided and will be available at 6:30 pm, and the presentation will begin at 7:00.

Please RSVP with number of attendees to [minnmass@minnmass.org](mailto:minnmass@minnmass.org)



UNIVERSITY OF MINNESOTA

DEPARTMENT OF

Food Science and Nutrition



## ABSTRACT

The Maillard reaction is a key food reaction that is known to impact food flavor, color, toxicity and nutritional value; it is also known to play an important role in regulatory biology and age related pathology. This presentation will focus on a few examples of how we have utilized various mass spectrometry techniques to improve our understanding of Maillard chemistry in both food and biological systems.

## RESEARCH

My research program is focused on food flavor and related chemistry. Particular areas of emphasis include flavor generation, characterization of flavor compounds, and flavor delivery in foodstuffs. Recent efforts by my research group involve investigating mechanisms of flavor development of whole grain foods, both taste and aroma-actives. A goal of this work is to better understand the influence of whole grain composition (i.e. phenolic compounds) on the pathways of flavor development, ideally to support the production of more 'whole' or less 'refined' foods with high palatability and flavor quality to help promote consumption for related health benefits.

## RECENT PUBLICATIONS

Jiang, D. , Chiaro, C., Mad-dali, P, Prabhu, S.K. and **Peterson, D.G.** Identifica-

tion of hydroxycinnamic acid-Maillard reaction products in low-moisture baking model systems. *J. Agric. Food Chem.* 2009. 57, 9932–9943.

Jiang, D. and **Peterson, D.G.** Role of hydroxycinnamic acids on food flavor: a brief overview. *Phytochemical reviews*. In Press.

Potineni, R.V. and **Peterson, D.G.** Mechanisms of flavor release in chewing gum: Cinnamaldehyde. 2008. *J. Agric. Food Chem* 56, 3260–3267.

Potineni, R.V. and **Peterson, D.G.** Influence of flavor solvent on flavor release and perception in sugar-free chewing gum. 2008. *J. Agric. Food Chem* 56, 3254–3259.

Tapanapunnitikul, O., Chaiseri, S., **Peterson, D.**, Thompson, D. Water solubility of flavor compounds influences formation of flavor inclusion complexes from dispersed high-amylose maize starch. 2008. *J. Agric. Food Chem* 56, 220-226.

Ghosh, S., **Peterson, D.G.**, J.N. Coupland. Temporal Aroma Release Profile of Solid and Liquid Droplet Emulsions. 2008. *Food Biophysics*. 3:335–343

Vunta H, Davis F, Palempalli UD, Bhat D, Arner RJ, Thompson JT, **Peterson**

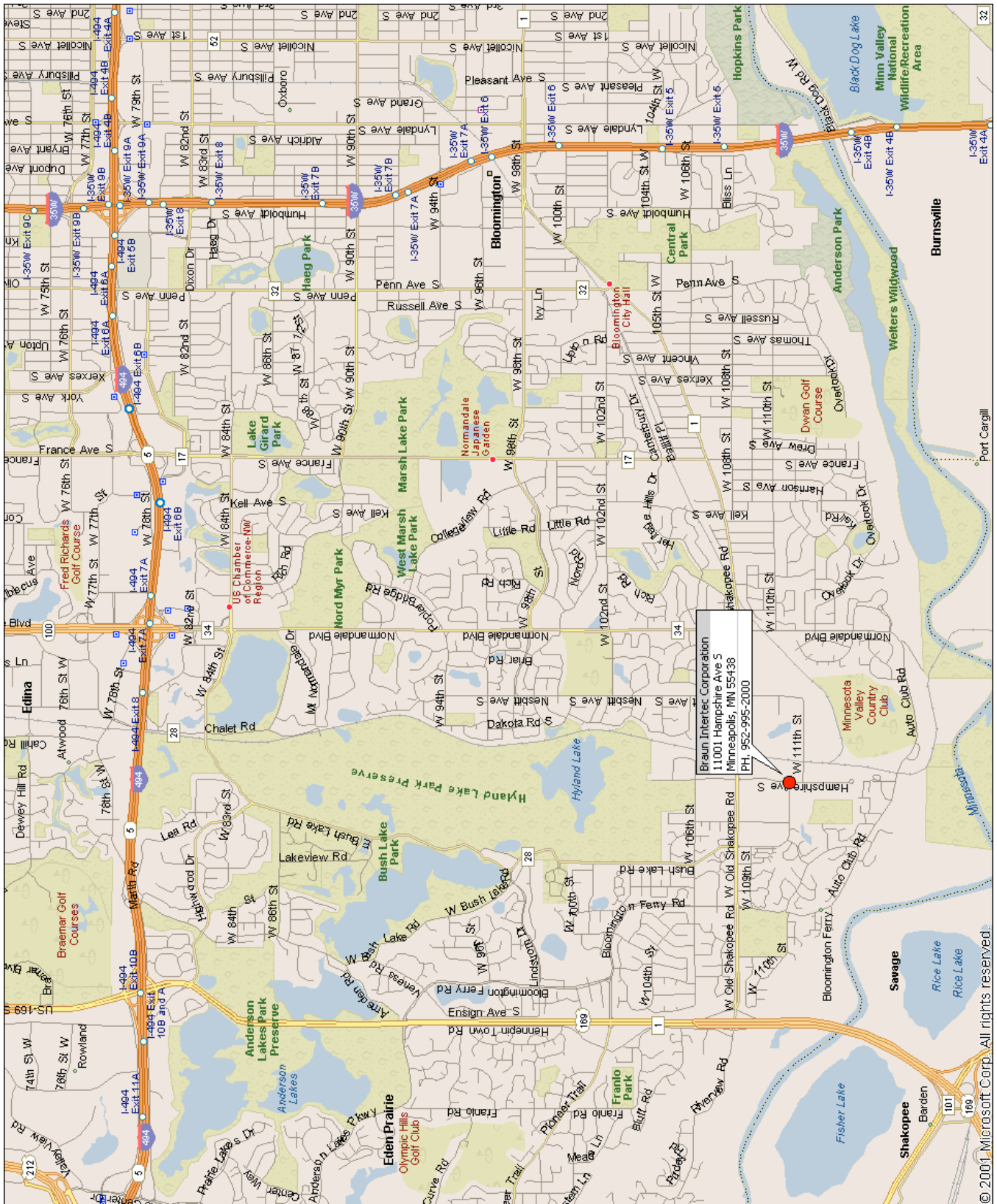
**DG**, Reddy CC, Prabhu KS. 2007. The Anti-inflammatory Effects of Selenium Are Mediated through 15-Deoxy- $\Delta$ 12,14-prostaglandin J2 in Macrophages. *J. Biol. Chem.* V. 282, No. 25, pp. 17964–17973.

**Peterson, D.G.** and Noda, Y. Role of Phenolic Reactions on Maillard Reaction Flavours. Wartburg Flavor Symposium. 8th Wartburg Symposium Proceedings on Flavor Chemistry & Biology February 28 - March 2, 2007, Eisenach, Germany.

Ghosh, G., **Peterson, D.G.** and Coupland, J.N. 2007. Aroma Release from Solid Droplet Emulsions: Effect of Lipid Type. *JAOCS*. 84:1001–1014

Noda, Y. and **Peterson, D.G.** 2007. Structure-reactivity relationships of flavan-3-ols on product generation in aqueous glucose/glycine model systems. *J. Agric. Food Chem.* 55. 3686-3691.

Totlani, V.M. and **Peterson, D.G.** Influence of Epicatechin Reactions on the Mechanisms of Maillard Product Formation in Low Moisture Model Systems. *J. Ag. Fd. Chem.* 2007. 55: 414-420.



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TALK FACILITIES



**Braun Intertec**

Braun Intertec is located just south of Old Shakopee Road in between Normandale Blvd. and Hwy 169. Anyone with questions about directions for whom the map is not clear can email:

[minnmass@minnmass.org](mailto:minnmass@minnmass.org)

for clarification.

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<http://www.minnmass.org>

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