



We will begin momentarily at 2pm ET



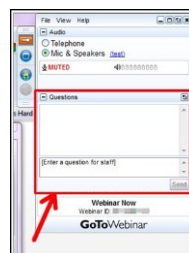
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“Why am I muted?”

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Thursday, January 26, 2017



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How to Make Chocolate for your Special Valentine: Flowers Bloom, Chocolate Shouldn't

February 9, 2017



Have you tried making chocolates at home only to find that white hazy surface on your pieces the next day? That's not mold, it means you didn't temper your chocolate properly. Learn the chemistry of chocolate bloom by attending this webinar so you can woo your sweet with delicious handcrafted chocolates for Valentine's Day

[Register Now](#)

What You Will Learn

- The multiple crystalline forms or polymorphs that cocoa butter creates
- How to control cocoa butter polymorphism to make great chocolate
- How mis-tempering causes chocolate bloom

Webinar Details

- Date: Thursday, February 9, 2017 @ 2-3pm ET
- Fee: Free to Attend
- Download Slides: Available Day of Broadcast



Expert



Rich Hartel
University of
Wisconsin-Madison



Bill Courtney
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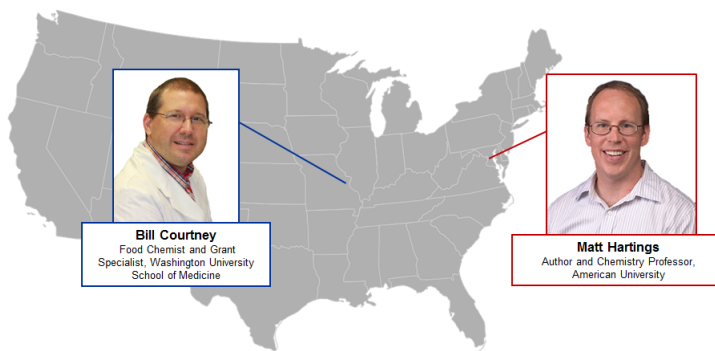


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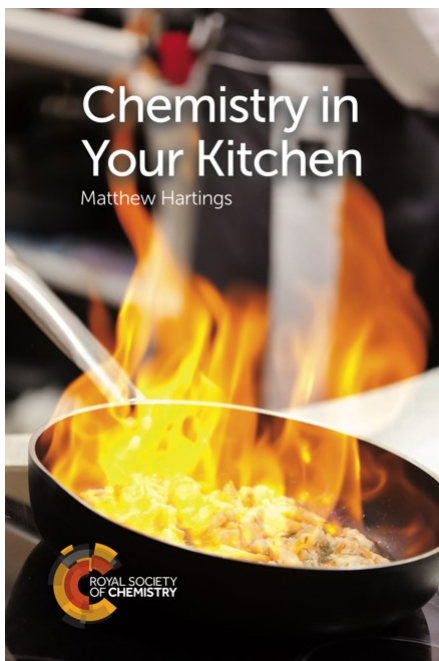


The Kitchen Chemist

Matt Hartings
American University
hartings@american.edu
@sciencegeist



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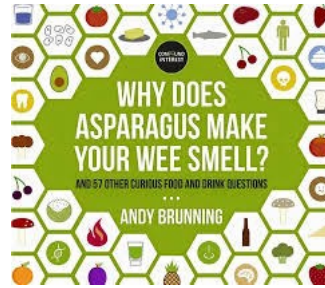
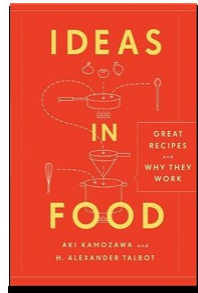
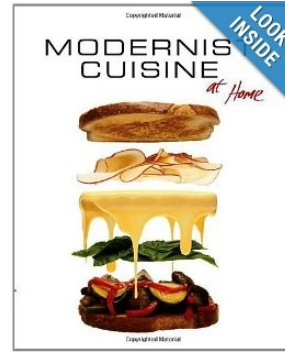
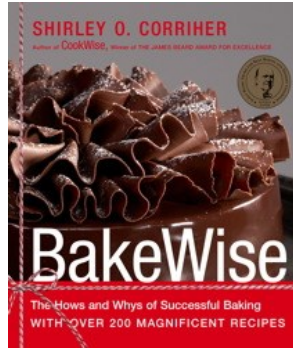
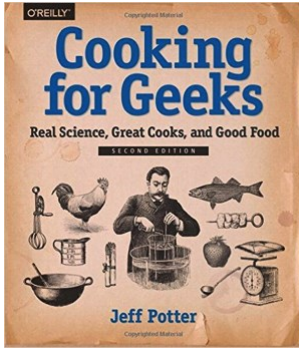
**Communicating
Chemistry**

**Engagement with
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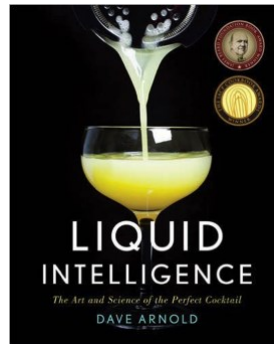
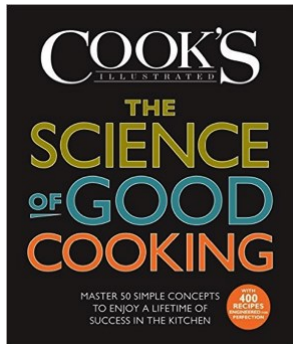
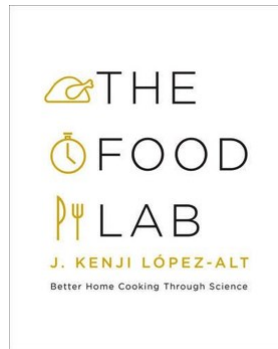
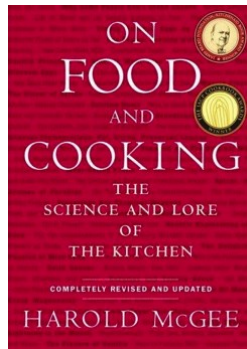
**Teaching
Chemistry**



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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

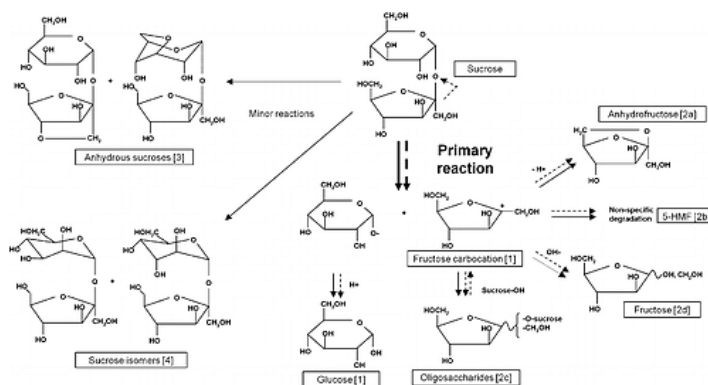
What is the first step in the mechanism for the caramelization of sucrose?

- Sucrose bucrose
- Sucrose decomposition
- Sucrose aggregation
- Sucrose melting
- None of the above



Attribution: APN MJM (Own work)
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702 *J. Agric. Food Chem.* 2011, 59, 702-712
DOI:10.1021/jf104235d

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ARTICLE

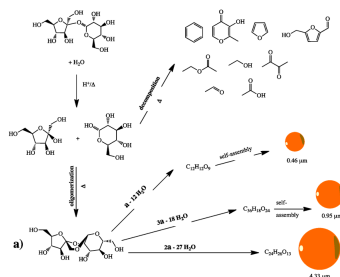
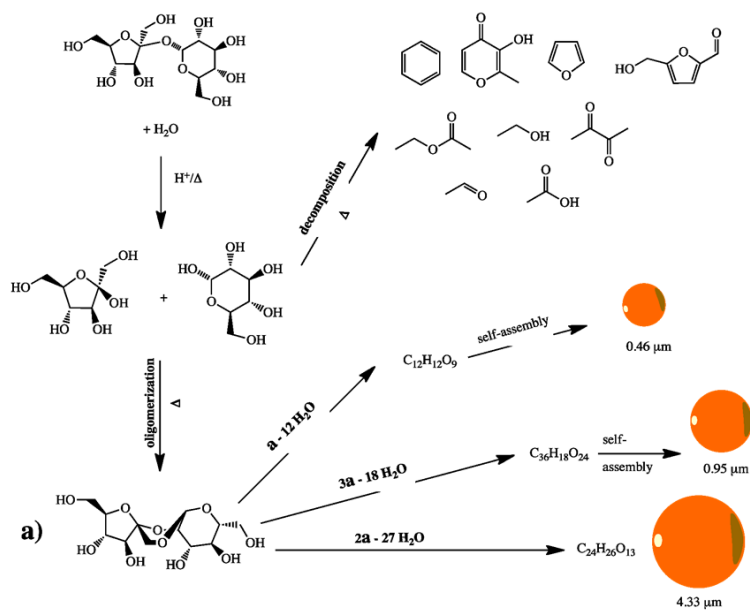
Investigation of Thermal Decomposition as the Kinetic Process That Causes the Loss of Crystalline Structure in Sucrose Using a Chemical Analysis Approach (Part II)

SHELLY J. SCHMIDT*

Department of Food Science and Human Nutrition, University of Illinois at Urbana-Champaign,
367 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801, United States



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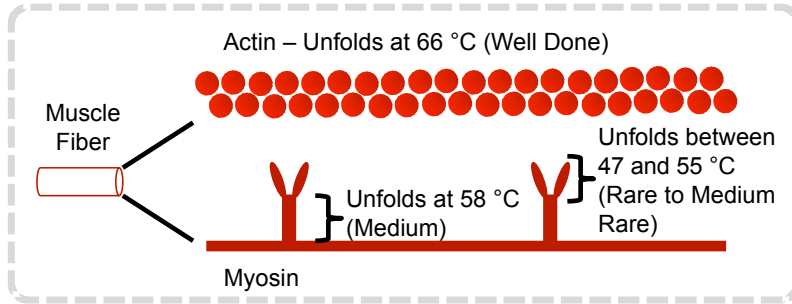
**Single pot
reaction with
defined output**

**Control over
multiple reaction
products**

**Monitor tricky
reaction based on
system color and
consistency**

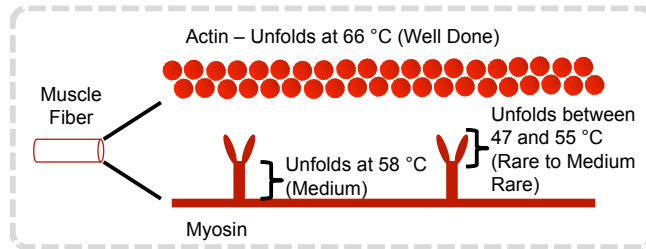


COOKING MEAT

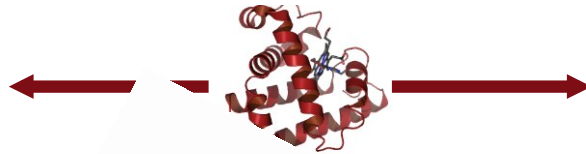


Numbers from: Dergez et al BMC Struct. Biol. (2007)

What is perfect?
User defined



Protein
Unfolding



Maillard
Reaction



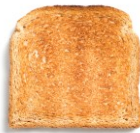
Internal Temperature = “Done-ness”
 Speed at which you get there makes it interesting
Kinetics FTW!!



Audience Survey Question 
 ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

The Maillard Reaction is responsible for the browning in making which of the following dishes? (possible multiple correct answers)

- Toast
- Fried chicken
- Cookies
- Ceviche
- Steak

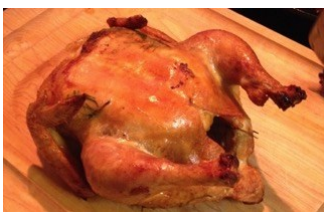


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Give your food (and its prep) the time it needs



Pizza dough
Long rise time



Chicken
Dry brining



Chartreus Liqueur
Barrel Aging



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Process Matters



nature
chemical biology

BRIEF COMMUNICATION

PUBLISHED ONLINE 9 JANUARY 2017 | DOI: 10.1038/NCHEMIB.2209

Biomimetic spinning of artificial spider silk from a chimeric minispidroin


Marlene Andersson^{1,2}, Qiupin Jia^{2,3,4}, Ana Abella², Xiau-Yeen Lee², Michael Landreh⁴, Pasi Purhonen^{5,6}, Hans Hebert^{4,6}, Maria Tenje^{2,4}, Carol V Robinson⁴, Qing Meng², Gustavo R Plaza², Jan Johansson^{1,4*} & Anna Rising^{2,4*}

Image Credit: Lena Holm

Scientists Have Finally Figured Out How To Spin Artificial Silk [17](#)
The Way Spiders Do



Carmen Drahl, CONTRIBUTOR

I cover chemistry, from its small molecules to its big questions. FULL BIO 
Opinions expressed by Forbes Contributors are their own.

Volume 95 Issue 3 | p. 5 | News of The Week
Issue Date: January 16, 2017 | Web Date: January 12, 2017

Process mimics spider silk spinning

Combining parts of silk proteins from various spider species improves production of artificial silk

By Celia Henry Arnaud



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	<u>Bread</u>	<u>Muffin</u>	<u>Pie</u>	<u>Biscuit</u>	<u>Cookie</u>
Flour	5	2	3	3	3
Liquid	3	2	1	2	
Egg		1			
Sugar					1
Fat		1	2	1	2



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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



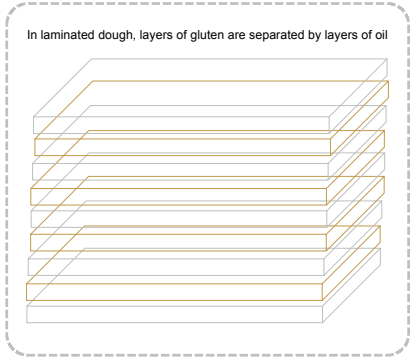
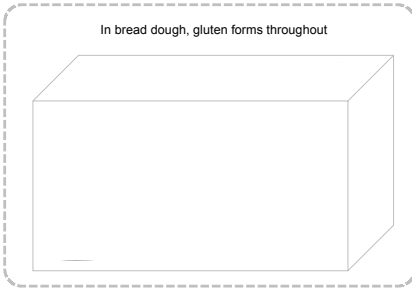
Gluten, the protein network that defines the consistency of most baked goods, is held together with interactions that can be generally classified as:

- Hydrophilic
- Hydrophobic
- Even mix of both
- Neither

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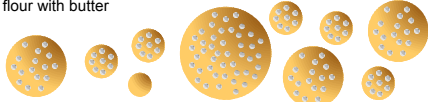


Image Credit: SKopp

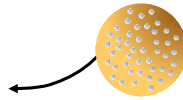


PIE DOUGH

Coat flour with butter

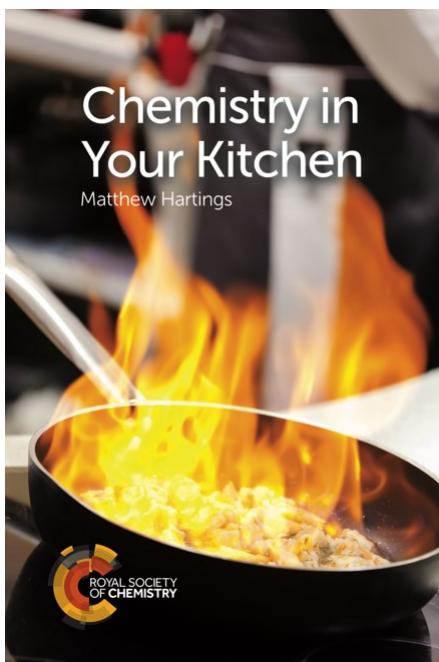


Streak the dough (*fraisage*)



Pie dough isn't fully laminated, but the presence of small patches of flour separated by a thin layer of butter is what makes it flaky.





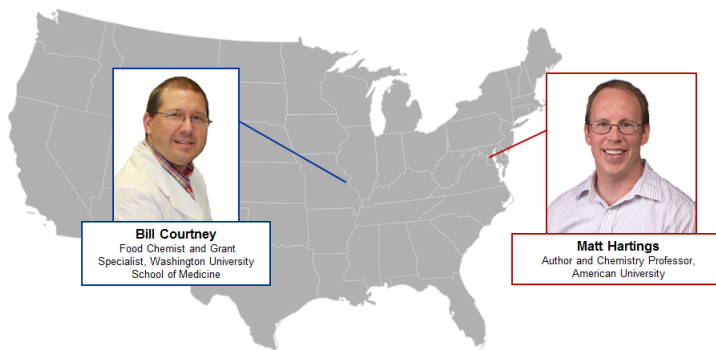
Great chemistry can and does come from many places. We chemists would be well served to do a better job of looking for chemistry where we might not expect it.



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“Kitchen Chemistry: We’ve Got a Lot to Learn from Professional and Recreational Cooks”



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Expert



Rich Hartzel
University of
Wisconsin-Madison



Bill Courtney
Washington
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Thursday, January 26, 2017



Fighting Cancer: Targeting CNS Malignancy with Kinase Inhibitors

Session 1 of the 2017 Drug Design and Delivery Symposium

Timothy Heffron, Senior Scientist, Genentech

Mark Wittman, Sr. Principal Scientist/Project Leader, Bristol-Myers Squibb

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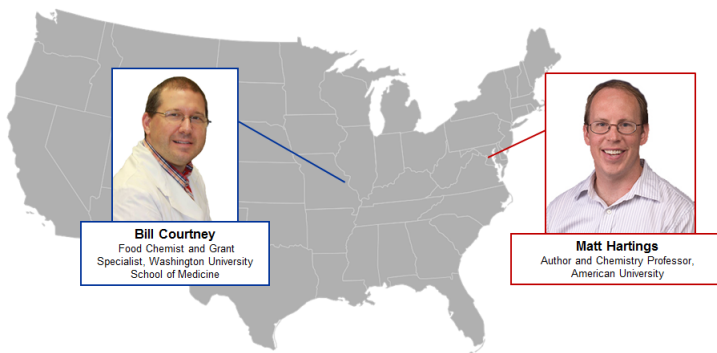
Melody Bomgardner, Senior Business Editor, *Chemical & Engineering News*

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