

Table of Contents

The Participants.....4



.....4

Workshop Agenda5

Workshop Photo Drive9

Example Template of Bars.....10

Blank Teaching Template21

Spencer Hyman, Cocoa Runners21

Intro to Fine Chocolate Glossary30

 Glossary Entries provided by ACS Participants30

 BIPOC.....30

 Antioxidant.....30

 Biodiversity.....30

 BCorp.....30

 Flavanol30

Theobroma cacao30

Teaching plans:.....31

 Humanities31

 Allison K Shutt - History.....32

 Corey Stayton – English Composition.....37

 Erika Berroth – Humanities and German Language39

Kefentse Chike - Africana Studies and History	44
Luisa Fernanda Arrieta Fernandez - History.....	46
Natural Science.....	48
Carmen L. Velez - Chemistry.....	48
Cory Toyota - Chemistry	51
Jaye Nias – Computer Science	54
Kristy Trevino - Chemistry	57
Laura Runyen-Janecky – Biology (Microbiology).....	59
Wolfgang Kramer - Chemistry	61
Fine Arts.....	63
Sarah Sylvester Williams – Art History and Political Science	63
Social Science and Interdisciplinary	65
Bärbel Kramer – Chemistry, Interdisciplinary and Study Abroad.....	65
John Wagner Givens – International Studies and Political Science.....	67
Katie Williams-Steele - Psychology.....	71
Romi Burks - Interdisciplinary	73
Final ACS Report	77

The Participants



1: ACS Chocolate Covered Teaching Workshop:

BACK: K Chife, H Hilton, C Stayton, W Kramer, C Toyota, J Givens;

MIDDLE: C Velez, B Kramer, L R-Janecky, LA Fernandez, J Nias, K Williams, E Berroth, MG Neville, A Shutt,

FRONT: Trevino, R Burks, S Williams

Workshop Agenda

Chocolate Covered Teaching: An innovative approach to using commodity-based goods to foster cross-disciplinary critical thinking skills in undergraduates

June 1 - 3, 2023



ROMI BURKS' PHONE: 512 869 8098

SU CAMPUS POLICE NUMBER: 512-863-1944

Southwestern University, 1001 East University Avenue, Georgetown, TX 78626

Thursday 6/1/23:

Fondren Jones Science Building - Building #5 on Map

1 - 4 pm Atrium - Check-in with Laura Polanco

(polancop@southwestern.edu)

Fondren Jones 402 & 403:

- 4 - 4:15 pm Welcome - The Team
- 4:15 - 4:45 pm: Chocolate Introductions - Romi + Everyone
- 4:45 - 5:15 pm: What Do You Want & What Do You Need - Cory
 - What would you like to leave the workshop with?
 - What do you need to make that happen?
 - [Introduce Teaching Template](#)

- 5:15 - 5:25 pm: 10 minute stretch break - GROUP PHOTO
- **5:25 - 6:15 pm: Consider History to Start - Luisa**
 - Introduce *Sweetness & Power* as a resource
 - Understanding/identifying context & facilitating difficult conversations

Fondren Jones ATRIUM:

- 6:30 pm - Dinner On Campus (RB or else goes and picks up Tony & Luigi's)
- **7:30 - 8:15 pm - BREAK** (can drop off things in apartments if you have not)
 - 8:15 pm - Example "Case Study"
 - Documentary: *Chocolate de Paz* (Columbia) - Luisa



2 Screenshot of *Chocolat de Paz* documentary film screening

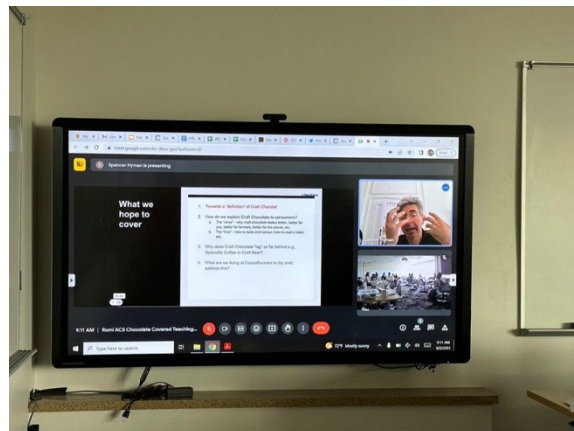
Friday 6/2/23: BRAIN STIMULATION DAY

Fondren Jones 402 & 403:

- 8:30 am - Breakfast Tacos (RB picks up) & Caffeine (Laura sets up)
- **9 am - 10:30 am: Seminar & Tasting - Romi**
 - International nature of chocolate
 - Webinar - What is Fine/Craft Chocolate?
 - Spencer Hyman (CocoaRunners - UK) with Q&A
- 10:30 - 11:00 am - BREAK - More caffeine/snacks

Informal discussion - dealing with/boosting student motivation - Cory

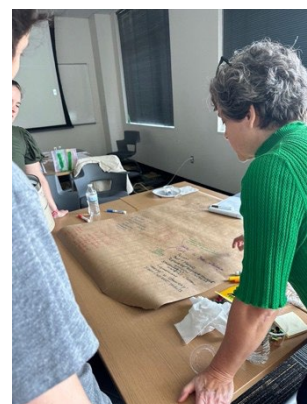
- 11:00 am - 12:15 pm - Brainstorm Session
 - Chocolate Topics & Connections: **Romi & Cory & Luisa**
 - Humanities
 - Social Science
 - Natural Science
 - Fine Arts
 - Introduce: Concept mapping across giant post-its
- 12:15 pm - 1 pm BREAK - Lunch On Campus
- **1 pm - 2:30 pm - Seminar: Life at Origin Romi** facilitates
 - Online Guest - Erin Andrews, INDI Chocolate
 - Q & A/Discussion - The term “origin” - “indigenous”
- 2:30 pm - 3 pm - BREAK - Caffeine/snacks
- ***Informal discussion - how does your institution define/id teaching excellence - Cory***
- 3 pm - 4 pm - Idea of the “Chocolate Umwelt” - **Luisa**
 - Unpacking your and your students’ experience with chocolate
 - Forming your own chocolate narrative
- 4 pm - 6 pm - Reflection Time
 - “Scheduled” - unscheduled time to just chat, write, work, read, etc...



3 Screenshot of webinar by Spencer Hyman of Cocoa Runners



5 Concept mapping teaching ideas across the disciplines



4 Reviewing the ideas of others to make connections

Fondren Jones ATRIUM: **6 pm Namaste Indian Dinner** - On campus

- 7 - 8 pm BREAK
- **8 pm -Optional Movie** - Dark Side of Chocolate: *The Chocolate War*

Saturday 6/3/23: OUTCOME DAY

Fondren Jones 402 & 403:

- 8:30 am - Continental Breakfast & Caffeine
- 9 am - 9:45 am - Breaking the Bar - Overcoming science-anxiety - **Cory**
 - **Chemistry Example of Teaching Template**
- 9:45 - 10: 15 am Example of Student Engagement - **Romi** facilitates
 - FCIA Glossary Project -
- 10:15 - 10:30 am - BREAK - More caffeine/snacks
- 10:30 am - 12:15 pm - Pair/Trio Working Group
 - Work on Fine Chocolate Glossary Definitions
 - Report back
 - 12: 15 pm - 1 pm CAVA (Delivery) BREAK Lunch on Campus
- 1 pm - 2:30 pm - “Scheduled” unstructured *shared*
 - Time to just chat, write, work, read, etc...
 - 2:30 pm - 3 pm - BREAK - Caffeine/snacks
- 3:30 - 4 pm - Closing Thoughts & Chocolate Teaching Community Building- **Romi**
- 4 pm - End officially by 4.
 - Draft Teaching Template
 - Draft Glossary Idea
 - List of contacts
- 6 pm - Dinner (9)- Off Campus
 - Blue Corn Harvest - Downtown Georgetown



6 Group chatting over one of the many meals that we shared



7 Celebrating the end of a successful workshop at a local restaurant

Workshop Photo Drive

**ACS Workshop Chocolate Covered Teaching:**

Google Drive photo Archive:

https://drive.google.com/drive/folders/1fVVpurZeM7_9OfB6OAnBW5gzLf-42TgX?usp=sharing

Example Template of Bars

Chocolate Bar Reflection & Worksheet

ACS Chocolate Covered Teaching Workshop

Chocolate Covered Teaching Workshop – Associated Colleges of the South

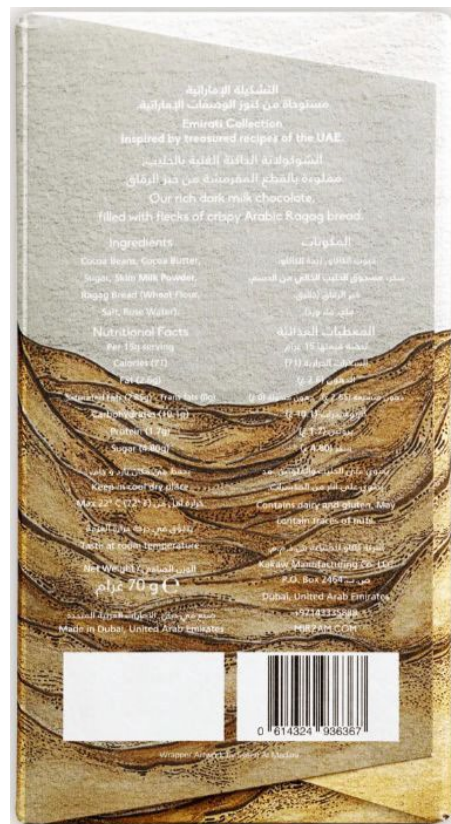
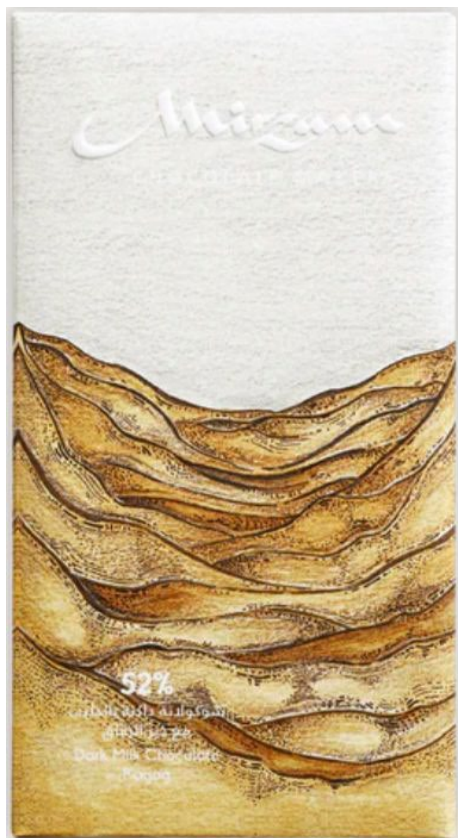
Identify the basics of your bars: origin, percentage, ingredients, certifications, product practices.

	Origin	Percentage	Ingredients	Certifications	Notes
Mirzam Ragag, Dark Milk Chocolate w/ Arabic Bread 52%					
French Broad Sea Salt 75%					
Ranger Variety					

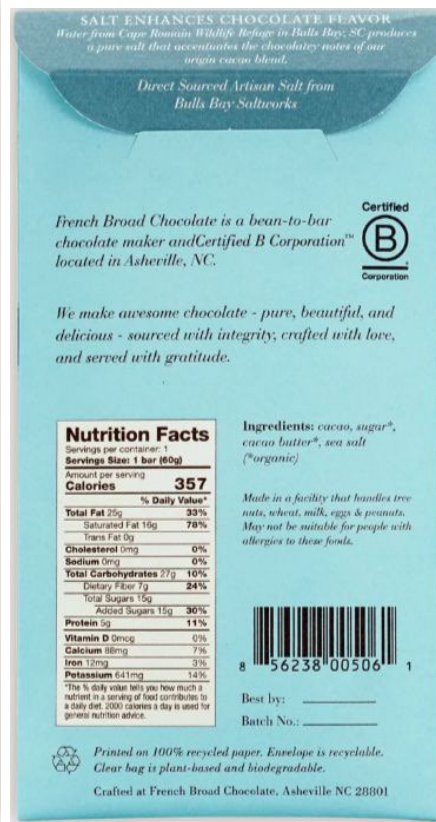
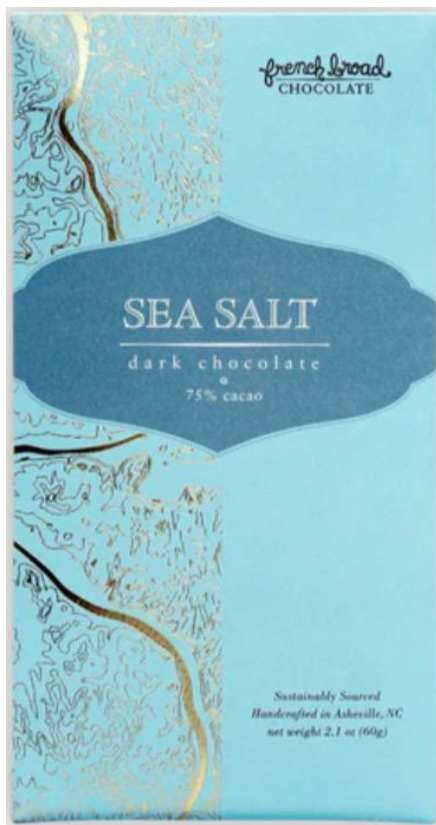


1. Further examine the packaging associated with your bars and reflect on what you found noticeable or even striking.

Continues on next slide



Mirzam Ragag, Dark Milk Chocolate w/ Arabic Bread 52% Packaging Response:



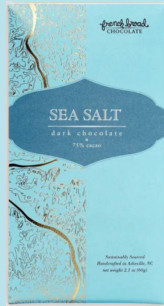
French Broad Sea Salt 75% Packaging Response:



Ranger Variety Packaging Response:

Chocolate Covered T

2.



Similarities between the bars:

Differences between the bars:

3. Speculate on why Dr. Romi Burks chose these bars for you given what interests you expressed and the type of work that you do.

Response:



4. Brainstorm 2 "topics" that you could possibly teach about that relates to these bars (i.e. social justice, biodiversity, chemical composition, cultural identity

- e.g.:

MIA = Made in Africa

Topic 1:

Topic 2:

5. Create a Student Learning Outcome (SLO) for Topic 1 & Topic 2 & envision how you might assess it.

--think up an assignment that gets grades

--consider a pre/post question

--ask students for a reflection that can score on "levels"

	Target Course	SLO	Assessment
Topic 1:			
Topic 2:			

Blank Teaching Template



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title:

Instructor(s):

Institution(s):

Discipline(s):

Course Level:

General Description of the Course (why is your course exciting for students?):

Student Learning Outcomes with Associated Assignments:



Student Preparation and Resources:

- ▶ Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- ▶ The Chocolate War:
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- ▶ Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- ▶ Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
 - ▶ Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

Spencer Hyman, Cocoa Runners

ACS DISCUSSION - Spencer Hyman, CocoaRunners.com

CHOCOLATE MATTERS - WHAT IS CRAFT
CHOCOLATE?

2ND JUNE, 2023



What we hope to cover

1. Towards a "definition" of Craft Chocolate
2. How do we explain Craft Chocolate to consumers?
 - a. The "whys" - why craft chocolate tastes better, better for you, better for farmers, better for the planet, etc.
 - b. The "how" - how to taste and savour, how to read a label, etc.
3. Why does Craft Chocolate "lag" so far behind e.g., Speciality Coffee or Craft Beer?
4. What are we doing at CocoaRunners to (try and) address this?

Chocolate, Craft (copied from FCIA website)

- Often contrasted with "commodity chocolate," craft chocolate is typically:
 - made in small batches;
 - from high-quality, traceable cocoa, where beans have been sourced for proper fermentation, drying, and storage;
 - with the goal of being savored for flavor, balance, length, and complexity.
- The place of manufacture is also often clearly stated for craft chocolate.
- Makers of craft chocolate may adopt a "less is more" approach, using only cocoa solids, cocoa butter, and minimal sugar. They will typically roast the whole cocoa bean, and conole to reveal what they consider to be the cocoa's optimal flavors in the finished chocolate.
- Craft chocolate makers often pride themselves on using ingredients that are readily recognizable, and typically present in home kitchens. They tend not to use artificial preservatives, flavor enhancers, bulking agents, and so forth.
- They may also prioritize paying above-market prices for cocoa, as well as environmental protections at origin.
- Consuming craft chocolate is about "savoring," not "scoffing." Savoring chocolate allows us to appreciate the flavors of the cocoa bean. It takes 5-30 seconds for all the flavors to emerge, so consumers need to sit back and enjoy the journey. In contrast to savoring, "scoffing" chocolate is about the "bliss point" combination of sweet, salty, and fatty tastes. These appear in less than half a second, and make you want to just keep getting that sugar, salt, and fat hit. When scoffing, the chocolate is incidental – it's "just" another commodity ingredient.

EXPLAINING THE DIFFERENCE

Let's compare Craft & Confectionery Chocolate

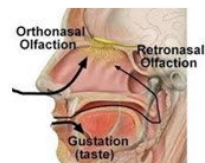
	Craft: Savour	Confectionery: Scoff
INGREDIENTS	Adopt the "less is more approach", only using cocoa solids, cocoa butter, and a small amount of sugar.	Use the "bliss point strategy" (adding fat, salt, and lots of sugar) to quickly satisfy.
FLAVOUR	Make to reveal flavour, through whole bean roasting, conching, and smaller batches.	Make as cheaply as possible, through roller roasting, high speed conching, and mass balance.
BEANS	Source beans with the finest flavour that are properly fermented, dried, and stored.	Source "commodity" ingredients not just cocoa, but also sugar, palm oil, and emulsifiers.
FARMERS	Pay farmers fairly for their expertise, 3-10 times more than commodity prices.	Encourage farming of bulk cocoa, where volume and cost are primary factors. Farmers earn \$0.80 per day.
ENVIRONMENT	Preserve the environment, by avoiding deforestation and avoiding depleting natural resources.	(At best) set up initiatives to "fix" desertification, deforestation, and child labour.

@cocoarunners.com | team@cocoarunners.com | @cocoarunners

TASTE VS. FLAVOUR



All tastes can be perceived equally well everywhere on the tongue. Please note: it is not that there were specific areas for sweet, sour, salty and bitter – but this has been proven to be wrong.



Savour the flavour – vs Scoff the “bliss point”

Auro Reserve
Luna Dark Milk
50%



THE BLISS POINT

- “Once you pop, you can’t stop”
- Sugar, Salt, Fat ... and Ultra Processed Foods





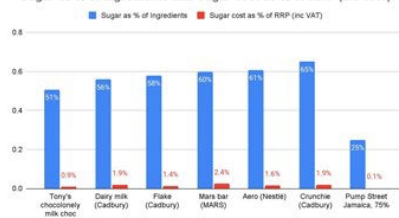
MASS PRODUCED CHOCOLATE

- Snacking & reward
- Sugar and bliss point
- Processed cocoa liquor & couverture - "ready meals for chocolate makers"

Moka Dark Milk
58%
Ghana (Abocfa)



Sugar as % of Ingredients and Sugar cost as % of RRP (inc VAT)



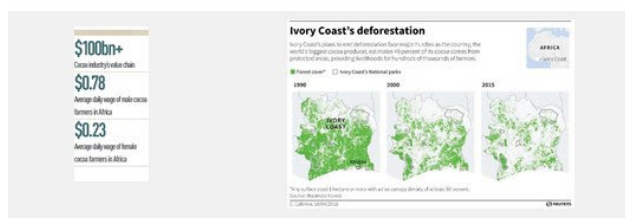
SUGAR IN CHOCOLATE

- Over 50% of ingredients ...
- ... less than 2.5% of retail costs
- And key for
 - Bliss Point
 - Preservative/stabiliser

Source: Manufacturers Websites (nutritional, RRP), Average Sugar Price over last two years from ICE.

Scoffing vs. Savouring

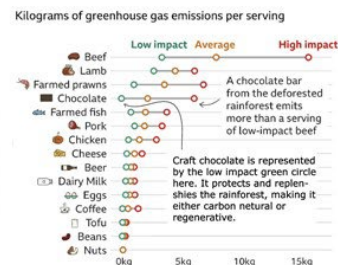




Undesired consequences

- Commodification
- Poverty
- Deforestation
- Desertification

UPGRADE TO CRAFT CHOCOLATE – MAXIMUM IMPACT VIA YOUR DIET?



Note: The figures for each food are based on calculations from 119 countries. Serving sizes are from the British Dietetic Association (BDA) and Bupa. Source: Poore & Nemecek (2018), Science.

CHECK THE LABEL / INGREDIENTS

CRAFT CHOCOLATE:

Chocolate made in Suffolk with beans sourced from a single farm. INGREDIENTS: cocoa beans, cane sugar & organic cocoa butter. Minimum cocoa solids 75%. For allergens, see ingredients in bold.

GENERIC, MASS PRODUCED CHOCOLATE

INGREDIENTS: MILK¹, sugar, cocoa butter, cocoa mass, vegetable fats (palm, shea), emulsifiers (E442, E476), flavourings. INGREDIENTS: MILK CHOCOLATE (SUGAR, MILK CHOCOLATE, COCOA BUTTER, LACTOSE, MILK FAT, SOY LECITHIN, PGPR, EMULSIFIER, VANILLA, ARTIFICIAL FLAVOUR, COLOUR). INGREDIENTS: MILK CHOCOLATE (SUGAR, MILK CHOCOLATE, COCOA BUTTER, LACTOSE, SOY LECITHIN, PGPR, EMULSIFIER, NATURAL AND ARTIFICIAL FLAVOURS, COLOUR, SWEETENERS, MANUFACTURED IN THE SAME EQUIPMENT THAT PROCESSES ALMONDS). (1) See The Hershey Company

INGREDIENTS: MILK CHOCOLATE (SUGAR, MILK CHOCOLATE, COCOA BUTTER, LACTOSE, MILK FAT, SOY LECITHIN, PGPR, EMULSIFIER, VANILLA, ARTIFICIAL FLAVOUR, COLOUR). INGREDIENTS: MILK CHOCOLATE (SUGAR, MILK CHOCOLATE, COCOA BUTTER, LACTOSE, SOY LECITHIN, PGPR, EMULSIFIER, NATURAL AND ARTIFICIAL FLAVOURS, COLOUR, SWEETENERS, MANUFACTURED IN THE SAME EQUIPMENT THAT PROCESSES ALMONDS). (1) See The Hershey Company

Cocoa Butter

Cocoa Solids

Sugar

Milk

Sugar

Vegetable Fats

E Numbers

Palm Oil

Artificial Flavouring

Soy Lecithin

PGPR?

Emulsifiers

Food Colourings

READ THE LABEL

1. INGREDIENTS – LESS IS MORE

No more than 3 (or 4 if milk). And ones that your grandmother would recognise

2. DETAILS OF THE FARMER, ESTATE, CO-OPERATIVE, ETC.

NOT merely the region or continent

3. MAKER'S ADDRESS AND DETAILS

And if they've roasted their beans – or are "remoulding"

... and remember "Belgian (or Swiss) Chocolate" does not mean it's made there!

What we hope to cover

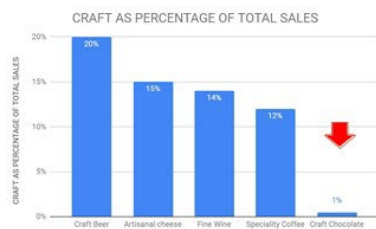
1. What's the "definition" of Craft Chocolate in the FCIA Glossary?
2. How do we explain Craft Chocolate to consumers?
 - a. The "whys" - why craft chocolate tastes better, better for you, better for farmers, better for the planet, etc.
 - b. The "hows" - how to taste and savour, how to read a label, etc.
3. Why does Craft Chocolate "lag" so far behind e.g., Specialty Coffee or Craft Beer?
4. What are we doing at CocoaRunners to (try and) address this?

CHOCOLATE SALES IN PERSPECTIVE - OVERALL



Sources: MarketLine, Business Insider, Statista, ICA, Forbes, FFI, SCA, Natural Products. Note: some differences in years (2014-2018)

CRAFT /ARTISAN SALES IN PERSPECTIVE



Sources: Specialty Coffee Association (2012, 2015), Beverage Digest (2015, 2018), ICA (2015-2018), Wine Business (2015, 2018), Global Wines (2015, 2018), Statista (2015), wine selling for more than \$100 a bottle. Note that the very high craft coffee market is a sub-set of the whole. Specialty or gourmet chocolate market estimates based on consumption of the term. The Global Wines magazine (2015) and (2018) - report on the market.

And a simple definition - Specialty Coffee

The term "specialty coffee" was first used in 1974 by Erna Knutsen in the *Tea & Coffee Trade Journal*. She used it to refer to "beans of the best flavour produced in special microclimates".

If you want to get technical about it, any coffee that scores 80 points or above out of 100 by a Specialty Coffee Association-certified coffee taster or Q grader is defined as "specialty".

Caffeine Magazine, 2019 Dec

Craft Beer – “cool club” definition



Independent Craft Brewer Seal

An American craft brewer is a small and independent brewer.

Small

Annual production of 6 million barrels of beer or less (approximately 3 percent of U.S. annual sales). Beer production is attributed to a brewer according to rules of alternating proprietorships.

Independent

Less than 25 percent of the craft brewery is owned or controlled (or equivalent economic interest) by a beverage alcohol industry member that is not itself a craft brewer.

Brewer

Has a TTB Brewer's Notice and makes beer.

LESSON: ADDICTIVE & COOL

Are you providing

- A Vitamin?
- An Aspirin?
- An Opioid?



COMPARISONS


- Vitamin vs. Painkiller vs. Opioid – competition with Sugar
- Occasion and excitement
- Solitary pleasure versus social activity
- Ingredients versus finished product



Not a simple “upgrade”

What we hope to cover

1. What's the "definition" of Craft Chocolate in the FCIA Glossary?
2. How do we explain Craft Chocolate to consumers?
 - a. The "whys" - why craft chocolate tastes better, better for you, better for farmers, better for the planet, etc.
 - b. The "how" - how to taste and savour, how to read a label, etc.
3. Why does Craft Chocolate "lag" so far behind e.g., Specialty Coffee or Craft Beer?
4. What are we doing at CocoaRunners to (try and) address this?



Mass market
chocolate
retail today

MUSIC & DISCOVERY

COCOA RUNNERS



OUR SOLUTION

MONTHLY PLAYLISTS FROM
COCOA RUNNERS
(FROM £22.95 PER MONTH plus
P&P)

COCOA RUNNERS





Come to another
Zoom MasterClass -
every Wednesday,
8pm (GMT!)

Please use the code ACS20

- Vegan options
- Couples packs
- Family / Team packs

THANK YOU!

Questions?



Intro to Fine Chocolate Glossary



What is the Glossary?

The Fine Chocolate Glossary provides a shared space for leading experts to establish a common language for all things chocolate. It emerged from a survey to identify priorities for the Value Chain Committee of the Fine Chocolate Industry Association. However, the Glossary extends beyond FCIA as an open-source resource available to anyone and includes recruitment of authors from both within and outside the FCIA membership.

From “artisan” to “value chain,” many terms have become part of our everyday conversations about fine chocolate. But *how* we use these terms, and *what we mean* by them, can differ from person to person, situation to situation.

Each entry in the Glossary shares insights from experts around the world: cocoa farmers, chocolate makers, researchers, supply chain professionals, and thought leaders across the industry.

Together, these experts help us arrive at a shared understanding of the language of fine chocolate.

Glossary Entries provided by ACS Participants

[BIPOC](#)

[Antioxidant](#)

[Biodiversity](#)

[BCorp](#)

[Flavanol](#)

[*Theobroma cacao*](#)

In progress:

Plantation

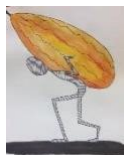
Vanillin

Teaching plans:

Humanities

Allison K Shutt - History

(shutt@hendrix.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Violence & Memory in Central Africa

Instructor(s): Allison K Shutt

Institution(s): Hendrix College

Discipline(s): History

Course Level: 200-level, sophomores

General Description of the Course (why is your course exciting for students?):

This class focuses on two crucial periods in the history of the Democratic Republic of the Congo: the Congo Free State under King Leopold II (1885-1908) and the unraveling of the first independent Congo and the assassination of the first Prime Minister, Patrice Lumumba (1960-c. 1965). More broadly, a close reading of the stories told about these two periods of history allows us to ask questions about documenting violence, the role of memory in assessing historical events, and the use of evidence in constructing historical narratives and memory.

Student Learning Outcomes with Associated Assignments:

- Remember and understand the basic historical narrative of the Congo Free State and the assassination of Patrice Lumumba;
- Analyze how history and memory are connected;
- Apply their knowledge of history and memory in discussion, focused papers, and peer review exercises;
- Evaluate the arguments of others, including professional historians;
- Write original papers and *create a museum space* for the study and memory of the Congo Free State period.

*The assignment around chocolate is an addition to the museum exercise. *

Student Preparation and resources:

- Required: Jonathan Robbins, "Slave cocoa and red rubber: E.D. Morel and the problem of ethical consumption," *Comparative Studies in Society and History*, 54, 3 (2012), 592-611.
- Chocolate from Eastern Congo (DRC)
- Optional for student assessment of ethical consumption campaigns: Chocolate's Dark Secrets: <https://www.youtube.com/watch?v=rcf2o42txUE>

Detailed Description of Assignments:

➤ Brief description of process & assignment:

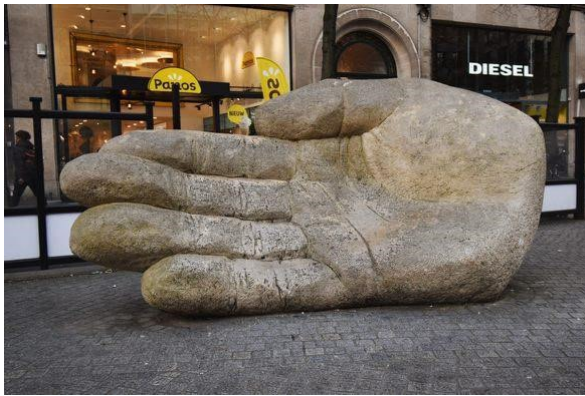
- Students read and absorb analyses of three types of outsider intervention: raising public awareness (Congo Reform Association, early 20th century), industry supply chain boycott (Cadbury, early 20th century), and ethical consumption/fair trade (Virunga chocolate, early twenty-first century). Students will add chocolate to an existing assignment about museums.

➤ Background: “Red Rubber” atrocities

- To begin the course, students read primary sources—from Africans and others—about the violence of conquest and the rubber trade in the Congo Free State. They also read an excerpt from a Debora Silverman article about the connection she sees between the severing of hands (especially hands, but also other limbs) in the Congo and the centrality of severed limbs in Belgian nationalist folk stories and the heroics of the leader Brabo. Severed hands historically represented vengeance, conquest, and victory. Silverman argues that colonial service instructors inculcated this history into administrators and army officers training for work in the Congo Free State.
- Images of severed hands are ubiquitous in Antwerp, the main port through which goods to and from the Congo Free State moved in Belgium. For example, the rail station in Antwerp was situated nearby the Brabo fountain



- Hands in different forms (chocolate pieces, sculpture) are part of contemporary life in Belgium. [Note: the mayor of Antwerp disputes Silverman’s analysis to say that there is no connection between the public art of hands in the city and the Congo Free State. Silverman’s argument is more complex than merely pointing out superficial associations between the significance of hands in Belgium and the Congo. If you’re interested, read her articles on artist styles.]



- sources: Brabo Fountain – Antwerp, Belgium - Atlas Obscura; Hand of Druon Antigoon – Antwerp, Belgium - Atlas Obscura; Chocolate Candy Hands still sold in Belgium despite Congo Genocide of King Leopold / SamePassage

- The Congo Reform Association: Mobilizing the [British] public [Ethical Empire]
 - Students will already have read about the Congo Reform Association's (CRA) campaign against the atrocities in the Congo as well as the CRA's problematic tactics (atrocious photographs that captured the attention of British Christian [mostly] audiences but obscured the workings of the colonial regime and ignored common atrocities, such as rape). The CRA's "lantern lectures" [an early 20th century PowerPoint] focused attention on severed limbs. The campaign was useful in organizing opposition to King Leopold's sovereignty over the Congo Free State, but it did not end the atrocities associated with rubber collection. In ABIR, the concession company region most associated with atrocities, was on the decline by the time of the CRA's campaign due to the exhaustion of the rubber source.
- Now add chocolate: Mobilizing industry [Ethical Sourcing]
 - Next, I will introduce students to cocoa production in São Tomé & Príncipe to focus on the idea of consumer boycotts to protest (and change) companies' use of coerced labor. Students will read Jonathan Robbins' article, "Slave cocoa and red rubber: E.D. Morel and the problem of ethical consumption," *Comparative Studies in Society and History*, 54, 3 (2012), 592-611. They will take good notes, and we will discuss! Morel, who was a close friend of Cadbury's, was skeptical of consumer boycotts. After all, it took years of active campaigning to rouse the British public to demand their government pressure the Belgians to oust Leopold II.
 - Note: William Cadbury was a devoted Quaker, and Cadbury's built its consumer reputation on the idea that its production of chocolate was ethical from start to finish. Cadbury did not boycott Sao Tome because it was the only producer available (and new cocoa plants take years to mature), but William Cadbury urged companies to pressure the Portuguese to change its labor practices. The pressure campaign failed. Cadbury was only able to convince other Quaker-owned firms and one German company to join the campaign. Eventually, Cadbury's supply moved to the British colonial territory, Gold Coast (Ghana).

➤ Assignment: Mobilizing consumers [“ethical consumption”]

■ This assignment comes at the end of a unit and just before fall break. This “soft landing” exercise both completes the unit and gives students an opportunity to work with others on a lower-stake assignment. [By this point in the class the students have written three papers, engaged in seminar discussions, and some of them have led discussion.]

- Day 1: Read & discuss Robins’ article
- Day 2: Introduce contemporary consumer activism; Use Eastern Congo chocolate bar [to taste; to read the packaging especially]; present assignment [see below]; form teams
- Day 3: Work in class: Student teams a) consolidate what they know about the strategies for change used by the CRA and Cadbury; b) apply their historical knowledge of these campaigns to assess “Fair Trade” and consumer-centered campaigns; c) assess Fair Trade/ethical consumption
- Day 4: Students present their posters/PowerPoint displays to their peers [students move from station to station in timed presentations]
1 Fall break begins....



➤ “(Your) Memories of the Congo”

■ Friday and Monday’s classes are devoted to you thinking about the public history and memory of the Congo. Begin this process of imagination and analysis by reflecting on your understanding of the history of violence in the CFS. How might you translate your understanding of the past into an exhibit meant for public memory (a museum) about the Congo Free State period? Building on your theme, what events, people, and ideas would you highlight as essential for people to know and understand? What objects, including testimonies, photographs, pamphlets, books (you can add to the list) would you use to complement your historical narrative? Your museum must include a space/exhibit devoted to contemporary issues of production, sourcing, and labor in Central Africa. You will present your museum to the class on Wednesday.

■ **(Part 1) [due by 4pm on Monday]**

1. You have the entire class period to **think about/imagine** your exhibit idea. You may use your notes and articles on our Teams page. Who is your audience, and what idea/s do you want them to walk away with? Where is your museum? Is it an independent museum or is it connected to another museum somewhere else (or nearby)?
2. Once you have answered the questions above, **write** at least one paragraph about the **central idea** of your exhibit. What is the point of your museum/exhibit? You must use at least one article (your choice) as a jumping off point for your idea.
3. **Next, List up to five themes** of your exhibit that contribute to the central point of your exhibit. (You can make a simple list here, as in 1: XXX, 2: YYY, 3 ZZZ, and so on.) **Consider:** How are the themes related to one another and how together they represent your overall theme.

4. **List up to five items** relevant to your exhibit. [continued ...]
5. **Create** your museum, as a PowerPoint (or some other, better visual [or sound] display).
6. For each of your themes with items, **explain** in writing what meaning you're making from the theme/item/display [think of this as being the explanation under or beside a piece in a museum that includes a date, who created the piece, what is known about the piece, where it was constructed, a title, and your interpretation of the item's meaning].
7. **Write** an overall explanation of your museum idea (one page is sufficient).
8. **Submit** your project (explanations, themes, PowerPoint or some other visual) by 4pm.

■ (Part 2) [Wednesday's class: Museum presentations]

1. **Before class, upload** your museum exhibit to the Museum channel located on our Teams page. Your museum idea can be in the form of a PowerPoint presentation, an essay, a video—in other words, whatever medium suits your idea best. Include your explanations and your overall vision of the museum.
2. In class, **present** your choices, themes, and ideas to your colleagues.

Corey Stayton – English Composition
corey.stayton@morehouse.edu



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: English Composition 101: The Chocolate Chronicles

Instructor(s): Corey Stayton **Institution(s):**

Morehouse College **Discipline(s):** English

Course Level: Freshman

General Description of the Course (why is your course exciting for students?):

English Composition 101: The Chocolate Chronicles is an engaging and unique English composition course that focuses on the theme of chocolate. This course combines the art of writing with the tantalizing world of chocolate to enhance students' composition and rhetorical skills. Through a variety of literary texts, historical contexts, and hands-on experiences, students will explore the rich cultural significance and multifaceted nature of chocolate while honing their writing abilities.

Student Learning Outcomes with Associated Assignments:

- Enhance Critical Thinking: Cultivate critical thinking skills by analyzing and interpreting complex texts related to the history, cultural significance, and production of chocolate.
- Explore Literary Representations: Investigate literary works that employ chocolate as a symbol, metaphor, or thematic element to understand how authors use this luscious treat to convey deeper meaning.
- Analyze Cultural Significance: Examine the historical and cultural significance of chocolate in different societies and contexts, considering its economic, social, and political implications.
- Develop Research Skills: Equip students with research methodologies to explore the origins, production processes, and social impacts of chocolate, allowing for evidencebased argumentation.

Student Preparation and resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate

Craft Chocolate TV YouTube Channel:

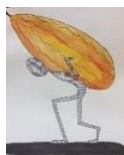
<https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>

- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- Narrative Essay/ Journal Entries for class: Chocolate Prompts
 - Relate your essay to a memorable experience with chocolate
- Process Analysis Essay
 - 3–5-page essay discussing the chocolate-making process from growing to Chocolate molds.
- Definition essay
 - 3–5-page essay defining a Chocolatier
- Argumentative essay
 - 3–5-page essay argues a social justice position on the Chocolate industry
- Descriptive Essay
 - Chocolate Connoisseur. Rate the chocolate sample.

Erika Berroth – Humanities and German Language
(berrothe@southwestern.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: German Language and Culture (Unit for variable proficiency levels)

Instructor(s): Erika Berroth

Institution(s): Southwestern University

Discipline(s): Humanities

Course Level: Multi - proficiency level

application

General Description of the Course (why is your course exciting for students?):

The German Program at SU integrates the study of language and culture throughout the curriculum. All courses, starting with Beginning German in the first semester through the Capstone for majors, support the Paideia concept of making connections between different areas of learning and experience. Thematic units related to justice issues (gender, social, environmental, etc.) cycle through the curriculum and increase in depth with increases in proficiencies.

Student Learning Outcomes with Associated Assignments:

- In alignment with national standards articulated in the NCSSFL/ACTFL Can-Do Statements, and the AAC&U VALUE Rubric for Intercultural Knowledge and Competence, We are mindful of Universal Design for Learning guidelines. (Continued Below) Learners will increase their abilities, and their knowledge, skills, and attitudes in the following areas:
 - **Interpretive Communication:** Learners understand, interpret, and analyze what is heard, read, or viewed on a variety of topics.
 - Learners understand the information shared on the packaging of craft chocolate from different cultures (Hungary, Austria, UAI).
 - Learners understand the descriptive terms used for communicating during chocolate tastings. (The Chocolate Tasting Wave. www.cocoarunners.com - <https://cocoarunners.com/shop/tastingwave/>)
 - **Interpersonal Communication:** Learners interact and negotiate meaning in spoken, signed, or written conversations to share information, reactions, feelings, and

opinions.

- In small groups, learners share their responses to chocolate tastings of the three samples, actively using descriptive terms, expressing likes and dislikes, and negotiating a group rating that includes a visual representation of data

Presentational Communication: Learners present information, concepts, and ideas to inform, explain, persuade, and narrate on a variety of topics using appropriate media and adapting to various audiences of listeners, readers, or viewers.

- Groups present the results of their chocolate tasting experiences to their peers. They guide their audience through their visual representation of data. They articulate recommendations for a variety of taste preferences.
- Intercultural Knowledge and Competence (adapted from AAC&U VALUE Rubrics)
 - <https://elt.ucsd.edu/files/AACU%20Value%20Rubrics.pdf>
 - Learners will engage a variety of proficiency-level appropriate authentic materials. Materials include the film *Peace by Chocolate*, footage of the “candy bomber” US pilots during the Berlin airlift <https://www.defense.gov/News/Feature-Stories/story/Article/3073227/thesweet-legacy-of-a-berlin-airlift-hero/>, the film *Peppermint Frieden* (1983) A film about a little German girl’s life in a village, 1943-1950, where peace comes in the shape of an American soldier who brings chewing gum to all the children, a soldier they call Mr. Frieden. Materials also include research on the German Mittelstand company Ritter Sport. Topics include their commitment to sustainability, fair trade, fair wage *Unser Weg* and their self-representation of the company’s history *Geschichte*. Also included are recent controversies about Ritter Sport’s market in Russia. <https://www.manager-magazin.de/unternehmen/ritter-sport-verdient-viel-geld-in-russland-und-spendet-es-a-add41803-c390-4542> Despite the war in Ukraine, Ritter Sport continues delivering products to its vast Russian market – yet donating profits to humanitarian causes. 19.04.2023)
- Knowledge: Cultural self-awareness and Knowledge of Cultural WorldView Frameworks
 - Learners explore their own cultural rules and biases and those of the target cultures. Topics include anti-racism and advertisements of chocolate products.
- Skills: Empathy and Verbal/Nonverbal Communication
 - Learners interpret an intercultural experience from the perspectives of their own and more than one worldview . They demonstrate their ability to act in a supportive manner that recognizes the feelings of another cultural group. Learners articulate a complex understanding of cultural differences. Topics include the film *Chocolate of Peace*.
- Attitudes: Openness and Curiosity
 - Learners ask complex questions about other cultures, seek out and articulate answers to these questions that reflect multiple cultural perspectives.
 - Learners initiate and develop interactions with culturally different others. They suspend judgment in valuing their interactions with culturally different others. This SLO could be facilitated through Collaborative Online International Learning COIL (What is COIL?)
- Integrative Learning (adapted from AAC&U VALUE Rubric) Connection to Experience

- Learners meaningfully synthesize connections among experiences outside of the formal classroom (including life experiences and academic experiences such as internships and travel abroad) to deepen their understanding of fields of study and to broaden their own points of view
- Connection to Discipline
 - Learners independently create wholes out of multiple parts (synthesize) or draw conclusions by combining examples, facts, or theories from more than one field of study or perspective
- Transfer
 - Learners adapt and apply, independently, skills, abilities, theories, or methodologies gained in one situation to new situations to solve difficult problems or explore complex issues in original ways.
- Integrated Communication
 - Learners fulfill the assignment(s) by choosing a format, language, or graph (or other visual representation - e.g. infographic) in ways that enhance meaning, making clear the interdependence of language and meaning, thought, and expression.
- Reflection and Self Assessment
 - Learners envision a future self (and possibly make plans that build on past experiences) that have occurred across multiple and diverse contexts.

Student Preparation and resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

➤ Universal Design for Learning Principles

Getting started with Universal Design for Learning (UDL)

Use these **three UDL principles adapted from CAST** when you're planning a lesson, daily routine, or activity for your students.

Provide multiple means of engagement**How can I engage all students in my class?**

- In what ways do I give students choice and autonomy?
- How do I make learning relevant to students' needs and wants?
- In what ways is my classroom accepting and supportive of all students?

Examples:

- Survey students about their interests, strengths, and needs. Incorporate the findings into lessons.
- Use choice menus for working toward goals.
- State learning goals clearly and in a way that feels relevant to students.

**Provide multiple means of representation****How can I present information in ways that reach all learners?**

- Have I considered options for how printed texts, pictures, and charts are displayed?
- What options do I provide for students who need support engaging with printed texts and/or with auditory learning?

Examples:

- Make it easy for students to adjust font sizes and background colors through technology.
- Provide options for engaging with texts, such as text-to-speech, audiobooks, or partner reading.

**Provide multiple means of action and expression****How can I offer purposeful options for students to show what they know?**

- When can I provide flexibility with timing and pacing?
- Have I considered methods aside from paper-and-pencil tasks for students to show what they know?
- Am I providing students access to assistive technology (AT)?

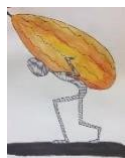
Examples:

- Provide calendars and checklists to help students track the subtasks for meeting a learning goal.
- Allow students to show what they know through a variety of formats, such as a poster presentation or a graphic organizer.
- Provide students with access to common AT, such as speech-to-text and text-to-speech.



Kefentse Chike - Africana Studies and History

(Chike@wayne.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: History of the African Diaspora to 1900

Instructor(s): Kefentse Chike, Ph.D

Institution(s): Morehouse College

Discipline(s): Africana Studies/History

Course Level: 100-level

General Description of the Course (why is your course exciting for students?):

This course explores key themes in the history of the African Diaspora from the ancient world to 1900. It will illustrate the historical and cultural roots of the African Diaspora, the transAtlantic slave trade, and New World forced labor systems, Black resistance strategies, and antislavery movements. We will explore African and African Diasporic cultural traditions and practices in the Atlantic World. In addition, this course will highlight the interconnections of Africa, Europe, and the Americas in the early modern period. The course will also expose students to various political, economic, cultural issues and forms of resistance as African people forged out a new life during the era of enslavement in the African Diaspora. *This course fulfills the FYE requirement.*

Student Learning Outcomes with Associated Assignments:

- Practice the habits of academic success.
- Write and speak clearly, specifically and accurately about African/African Amer. history.
- Integrate learning in the history of the African Diaspora
- Analyze social, economic, political, and cultural issues and inequities, regarding the role of race, class, gender, and sexuality in Africa and its Diaspora.

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITrU6NCsnbzdQ7A>

- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>
- Required Text:
 - Holloway, Joseph - *Africanisms in American Culture*
 - Mintz, Sidney – *Sweetness and Power*
 - Rodney, Walter – *How Europe Underdeveloped Africa*

Detailed Description of Assignments:

- Viewing and discussion of “Peace by Chocolate” video.
 - During the first- class students will be provided a brief history of Sugar, Cotton, and Chocolate and the role of each in colonialism (1500 – 1880) and the Era of Enslavement (1500 – 1880). ➤ **Research paper one** (2-3 pages)
 - In this assignment students will select an African Ethnic group (tribe) and the use the seven elements of culture (Social Organizations, Customs and Traditions, Art & Literature, Religion, Language, Economic systems, and Forms of Government). This assignment is designed to help students understand that that the various African ethnic groups of Africa had intact cultures prior to the Era of Enslavement and Colonialism. ➤ **Research paper two** (2-3 pages)
 - With the focus of selecting one of the elements of culture which examines the degree that that selected element was impacted by enslavement, colonialism, neo-colonialism.
 - **Research paper three** (2-3 pages)
 - Will be assigned which will focus on the economics of colonialism, enslavement, and neocolonialism. Special emphasis will be placed on the role of commodities i.e., Chocolate, Sugar, Cotton, Indigo, etc., ➤ **Research paper four** (2-3 pages)
 - Will focus on Africanism (African cultural retentions) the originate in the traditional African culture of the captured and enslaved Africans that persist in the culture of people of African descent in the African Diaspora. Students will be required to identify agricultural retained skills and practices that originated in pre-enslavement/colonial Africa that were retained in the African Diaspora.
 - **Final Research Paper** (12 – 15 pages)
 - Students will combine and edit the previously written short research papers into one full length research paper.

Luisa Fernanda Arrieta Fernandez - History
luisaarrieta@spelman.edu



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Making of the Modern World

Instructor(s): Luisa Fernanda Arrieta Fernandez

Institution(s): Spelman College

Discipline(s): History

Course Level: 300

General Description of the Course (why is your course exciting for students?):

This course introduces students to the main themes and events that have shaped the world since the beginning of the 16th century. It will particularly focus on the processes that created the global economy, society, and culture of today.

Student Learning Outcomes with Associated Assignments:

- ▶ Analyze connections between technology, science, societies, culture, and economies through global commodities. Draw comparisons, and track their interactions in the modern time period.

Student Preparation and Resources:

- ▶ Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- ▶ The Chocolate War:
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- ▶ Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- ▶ Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- ▶ Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- ▶ Students will recipe different samples of chocolate and identify which ones they would repurchase.
- ▶ The students will then be provided with the manufacturer information and will have to trace the suppliers of each item involve in the production of their #1 choice.
- ▶ Students will choose one of the countries where the supplies come from and report on: where the factory/warehouse is located; where the product is harvested; average number of employees and their wages; characteristics of the communities the workers live in; main challenges they encounter in their daily lives; cultural characteristics of the community.

Natural Science

Carmen L. Velez - Chemistry
(velezc@southwestern.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Organic Chemistry Lab Techniques

Instructor(s): Carmen L. Velez

Institution(s): Southwestern University

Discipline(s): Chemistry

Course Level: CHE51-311

General Description of the Course (why is your course exciting for students?):


In this course, students will be introduced to organic laboratory techniques with a focus on separation, purification, spectroscopy, and product analysis. In this course, chocolate will be integrated into the curriculum through a series of experiments and culturally relevant pedagogies.

Detailed Description of Assignments:

- Activity 1: Introduction to chocolate, tasting activity, and movie
 - Introduction to a semester-long chocolate activity
 - Tasting activity: Complete the table with components of each chocolate bar (include: origin, percentage, ingredients/chemical composition, notes, similarities between the bars, and differences between the bars)
 - Chewing gum, chocolate and solubility activity. Reference: JCE Classroom Activity #105. A Sticky Situation: Chewing Gum and Solubility
 - Watch “Chocolate de Paz” movie
- Activity 2: Molecular models
 - In this activity, students will be building the molecular structure of the main components in white, milk, and dark chocolate.

CHOCOLATE CHEMISTRY

Whether your preference is dark, milk, or white chocolate, here's a handy guide to what's inside!



DARK CHOCOLATE
COCOA SOLIDS: >35%


CN1C=NC2=C1C(=O)N(C)C2=O

THEOBROMINE
MEDIAN LETHAL DOSE FOR DOGS
300 mg
(PER KG OF BODY WEIGHT)

Dark chocolate has the highest amount of cocoa solids, which remain after cocoa butter is extracted from cacao beans. The solids contain theobromine, toxic to dogs, and phenethylamine, linked to a feel-good effect.

NCCc1ccccc1

PHENETHYLAMINE




MILK CHOCOLATE
COCOA SOLIDS: 20–30%

COc1ccc(O)c(C=O)c1

VANILLIN
Confectioners add vanillin to many milk chocolates to enhance their flavor. American brands of chocolate often contain butyric acid, which adds a sour note to the chocolate's taste.

CCCC(=O)O

BUTYRIC ACID



WHITE CHOCOLATE
COCOA SOLIDS: 0%

CCCCCCCCCCCCCCCC(=O)O

STEARIC ACID
White chocolate does not contain any cocoa solids, only cocoa butter, sugar, and milk. Cocoa butter is composed of a number of fats, mainly stearic acid and palmitic acid.

CCCCCCCCCCCCCCCC(=O)O

PALMITIC ACID

© C&EN 2016 Created by Andy Brunning for *Chemical & Engineering News*

➤ Activity 3: Solubility and Spectroscopy

- Students will study the solubility of the compounds in different solvents.
- Students will perform ^1H , ^{13}C , and IR spectroscopy of the different components of dark and milk chocolate.

Theobromine	https://www.sigmaaldrich.com/US/en/product/sigma/t4500	100g
Phenethylamine	https://www.sigmaaldrich.com/US/en/product/aldrich/128945	250mL
Butyric Acid	https://www.sigmaaldrich.com/US/en/product/mm/800457	1L
Vanillin	https://www.sigmaaldrich.com/US/en/product/mm/818718	100g

- Liquid liquid extraction of vanillin from vanilla extract and Thin Layer Chromatography (TLC)

■ Vanillin extraction video –

- <https://www.bing.com/videos/search?q=liquid+liquid+extraction+of+vanillin&view=detail&mid=AA1EB6DB67F6DE409257AA1EB6DB67F6DE409257&FORM=VRDGAR>

■ Vanillin extraction video –

- <https://www.bing.com/videos/search?q=liquid+liquid+extraction+of+vanillin&view=detail&mid=A242AAB969A2BB96CDF7A242AAB969A2BB96CDF7&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dliquid%2Bliquid%2Bextraction%2Bof%2Bvanillin%26FORM%3DHDRSC6>

■ Vanillin extraction (EtOAc) - preferred method.

- <https://www.bing.com/videos/search?q=liquid+liquid+extraction+of+vanillin&view=detail&mid=F3CA916174AE0268CDEBF3CA916174AE0268CDEB&FORM=VDQVAP&ru=%2Fvideos%2Fsearch%3Fq%3Dliquid%2Bliquid%2Bextraction%2Bof%2Bvanillin%26FORM%3DHDRSC6&rvsmid=A242AAB969A2BB96CDF7A242AAB969A2BB96CDF7&ajaxhist=0>

■ Chemicals needed for extraction:

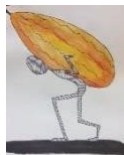
Vanilla sugar	Amazon	18 packets per group
Artificial vanilla	Amazon (different brands)	500 per group

- Activity 5: Inquiry-based lab activity, Synthesis of vanillin. In this activity, students will be working in groups of 3-4 and proposing the synthesis of vanillin via different synthetic routes.

■ Articles:

- J. Chem. Educ. 2007, 84, 7, 1158. Vanillin Synthesis from 4Hydroxybenzaldehyde
- Journal of Chemical Education 2012, 89, 2, 258-261 (Laboratory Experiment). The Nose Knows: Biotechnological Production of Vanillin
- Preparation of vanillin from eugenol and sawdust. Journal of Chemical Education 1977, 54, 12, 776 (Article)
- Cobalt-catalyzed Aerobic Oxidation of Eugenol to Vanillin and Vanillic Acid

Cory Toyota - Chemistry
(cory.toyota@millsaps.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Chocolate and Other Poisons

Instructor(s): Cory Toyota

Institution(s): Millsaps College, Jackson, MS

Discipline(s): General Chemistry

Course Level: Introductory level

General Description of the Course (why is your course exciting for students?):

Chocolate contains bioactive compounds (e.g. caffeine and theobromine) with positive effects (e.g. stimulant, mental focus, and mood-boosting) at low concentrations but are toxic at higher doses. Chocolate and other “poisons” will be used as a theme to scaffold fundamental chemistry and study skills into a course designed for primarily first-year undergraduate students. This introductory course would be appropriate for non-science majors and students with weaker backgrounds in algebra and science that plan to enter the general chemistry course series.

Student Learning Outcomes with Associated Assignments:

➤ Assignments will address:

- College success skills: Reading, time management, approach to studying
- Confidence and proficiency in algebra and calculations that chemists use
- Mastery of some fundamental chemistry concepts
- Competency in scientific literacy (e.g. analysis of charts, tables, and graphs)
- Introduction to further important chemistry concepts

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.co>

Detailed Description of Assignments:

- Chocolate Tasting and introduction to the chemistry, cacao agriculture and processing, chocolate making, business, ethics.
- Mass percent analysis of chocolate and LD_{50} conversions
- Chemical and scientific conversions with volumes, masses, etc. in chocolate production.
- Data analysis (chemical, economic, and demographic data)
- Kinetic data for the metabolism of theobromine in humans vs dogs (theobromine is much more toxic to dogs than to humans—we differ in how fast we metabolize the compounds).
- Cancer drugs
- Opioids

Jaye Nias – Computer Science
 (jnias@spelman.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: IBQC1XX (Introductory Big Question Colloquia) “Decolonizing Data: Chocolate, Bias and AI Ethics”

Instructor(s): Jaye Nias

Institution(s): Spelman College

Discipline(s): Computer and Information Sciences

Course Level: First-year seminar (100 level)

General Description of the Course (why is your course exciting for students?):

In this course, students will dissect the politics and history of global chocolate production as a cultural and socio-political phenomenon and how they align with the biases and industrialization of AI and Machine Learning that affect black and indigenous communities globally. By examining these two seemingly disparate topics, we will uncover the historical, social, economic, and ethical dimensions that intertwine them, shedding light on the power structures, exploitation, and cultural implications at play.

Student Learning Outcomes with Associated Assignments:

➤ Students will:

- Analyze the historical and cultural significance of chocolate as a global commodity, exploring its origins, cultivation, production, and consumption patterns.
- Investigate the socio-political dimensions of chocolate, examining the influence of colonialism, labor practices, and economic inequalities within the industry.
- Understand the impact of chocolate production on indigenous and black communities worldwide, highlighting issues such as land rights, environmental sustainability, and fair trade.
- Explore the biases and ethical challenges in AI and Machine Learning algorithms, emphasizing their impact on marginalized groups and the perpetuation of social inequalities.
- Draw connections between the politics of chocolate and AI, examining parallels in power dynamics, exploitation, cultural representation, and the role of activism in bringing about change.
- Encourage critical thinking and dialogue on issues of social justice, cultural appropriation, and sustainable practices within the chocolate industry and the AI field.

Student Preparation and Resources:

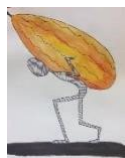
- **Chocolate's Dark Secrets:**
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- **The Chocolate War**
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- **Chocolat de Paz - Film: Peace by Chocolate**
 - Bought on Amazon
- **Craft Chocolate TV YouTube Channel:**
 - <https://www.youtube.com/channel/UCsSBsmrITrU6NCsnbzdQ7A>
- **Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:**
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- Students will share cultural uses of chocolate, cocoa-butter with respect to African American womanhood.
- Students will have weekly 'chocolate tastings' - where we will either ingest chocolate or highlight a specific chocolate product that illuminates the topic of the week (historical, industrial, craft, indigenous farmers, cosmetics, etc.)
- **Case Study Analysis:**
 - Students will be assigned several case study that highlights a real-world example of the socio-political dynamics within the chocolate industry or AI field.
 - (Full class) Together the class will extract important terms and extract in-context definitions. Later students will research formal definitions for the terms and write a class-co-authored glossary of terms based on our shared understanding of what they mean.
 - (Think-pair share) Students can analyze the case, identify the power structures at play, and assess the impact on marginalized communities. They should propose strategies for addressing the issues and promoting equity.
- **Group Presentation:**
 - Students will be divided into groups that have been assigned specific topics related to the course. They can conduct research, gather relevant data, and present their findings to the class.
- **Comparative Analysis:**
 - Assign students to compare and contrast the challenges faced by black and indigenous communities within the chocolate industry and within society. They can examine historical experiences, labor practices, cultural representation, and the effects of biases. Students will discuss the similarities, differences, and potential solutions for addressing these issues and create a visualization that depicts the process and points of 'inequity' in the bean-to-bar process.
- **Final Project Critical Ethical Framework Development for AI:**
 - Students using the chocolate industry as a model, students will develop an ethical framework for AI and Machine Learning. They should consider the principles of

fairness, justice, sustainability, and inclusivity. Students can present their frameworks and discuss the potential impact on industry practices and policy-making.

Kristy Trevino - Chemistry
(ktrevino@trinity.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Chemistry in Everyday Life

Instructor(s): Kristy Trevino **Institution(s):**

Trinity University **Discipline(s):** Chemistry

Course Level: 1000

General Description of the Course (why is your course exciting for students?):

- Basic chemistry concepts
- Application of chemistry in our everyday world
- Lab experiments

Student Learning Outcomes with Associated Assignments:

- Apply key concepts from the course and results of scientific research in the lab to real world applications and the natural world.
- Develop skills to communicate scientific data visually, verbally, and through written reports.

Student Preparation and Resources:

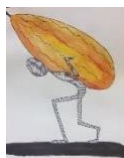
- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- In class do chocolate taste test and have students record thoughts and feedback (need for written report)
 - In lab have the students analyze the given chocolate bars
 - (-% cocoa, -% theobromine, -ingredients, -mineral composition)

- (Microwave digestion, extraction, IR, NMR, ICP-OES, HPLC)
- Write up a lab report with the taste test results, experiment results, make graphs/tables

Laura Runyen-Janecky – Biology (Microbiology)
lrundenj@richmond.edu



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Food Microbiology

Instructor(s): Laura Runyen-Janecky

Institution(s): University of Richmond

Discipline(s): Biology

Course Level: Upper level Biology elective

General Description of the Course (why is your course exciting for students?):

I am currently developing this course so there is no description yet. However, the general idea is to teach about how microorganisms influence the foods we eat in both beneficial and harmful ways. I will likely use cheese, chocolate, and some sort of pickled veggie as model systems.

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

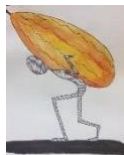
Detailed Description of Assignments:

- TBA

Student Learning Outcomes with Associated Assignments:

- LO 1A: Student can distinguish between tools/techniques for identifying microbes in food and choose the one(s) technique that enables them to determine whether there are viable microbes present in a food sample.
- LO 1B: Student can identify whether a specific bacterial species is present in food.
- Associated Assignments/Assessments for LO1
 - Pre-unit question on what techniques would student choose and why (using choices from core class, plate counts, PCR) - have students debate them
 - Develop lab experiment to test for a particular microbe in a chocolate (for example are there really probiotics in the Naive brand bar?)
- LO2: Student can articulate how microbes work sequentially in concert via microbial fermentation to address a biological need for themselves and produce products that influence food flavor.
- Associated Assignments/Assessments for LO2
 - Examine “classical” microbial fermentation → Identify pathways in cocoa and cheese production and compare how they affect the final products OR
 - Explore “classical” microbial fermentation pathways and predict which flavor compounds would likely increase in a double fermented bars - We could also connect to a chem class (extracting a molecule) or have a tasting of single and double chocolates from same company OR
 - Add to the FCIA Chocolate Glossary related to fermentation OR
 - Work on an authentic research project to characterize the microbial communities on chocolate boxes in different areas of the world. What microbes are common and what are unique and how do their fermentations contribute to flavor. I would need to read the literature and see what has been done on this.

Wolfgang Kramer - Chemistry
(kramewh@millsaps.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Health Effects of Chocolate Implications

Instructor(s): Wolfgang Kramer

Institution(s): Millsaps College

Discipline(s): Science Chem/Bio/BioChem

Course Level: 3000 (Should attract science and particularly pre-health students, chemistry combined with effects of the human health)

General Description of the Course (why is your course exciting for students?):

This course focuses on the effects of every aspect of food on the human being and the human being on their food. Topics include fermentation as a food processing and preservation process, components and their effect on metabolism, addiction, and brain chemistry, as well as health benefits of antioxidants and the elements of healthcare industry.

Student Learning Outcomes with Associated Assignments:

- Fermentation process in food industry + yogurt, sauerkraut, kombucha, beer, wine
- Blood- Brain Barrier: compounds that form, chemical structure requirements
- Effects of sugar on metabolism: Energy Storage
- addiction: compounds, receptors

Student Preparation and Resources:

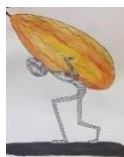
- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeo.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- fermenting Process:
 - equations of different fermentation processes, balanced, energy yield for microorganism
- Neuro active compounds and their function
- Sugar, hyper, function, metabolic pathways, regulations of pathways ➤
 - Antioxidants: function, chemistry, chemistry behind radical scavenging ➤
 - Addiction: sugar, theobromine
- list of beneficial substances in chocolate
- Effect of pesticides used in cocoa plantations

Fine Arts

Sarah Sylvester Williams – Art History and Political Science
(willisj@millsaps.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Art, Chocolate, & Power

Instructor(s): Sarah Sylvester Williams

Institution(s): Millsaps

Discipline(s): History; Art History; Poli Sci; Anthro/Sociology; Intl St

General Description of the Course (why is your course exciting for students?):

This course examines how power is held/established through the history of chocolate. From Ancient to the contemporary, viewing chocolate through the lens of colonization, racism, and trade relations. Students will investigate the visual (paintings, prints, advertisements, etc.) and material (ceramics, serving vessels, utensils, product design) of the culture of chocolate. Students will question the democratization of chocolate from an elite consumable to one imbibed by all levels of society. How does chocolate change over the course of centuries (either perceptions of it or its material/chemical properties) and what affect do these changes have on society? on health? on art?

Student Learning Outcomes with Associated Assignments:

- See chocolate as shifting from elite consumption and identity fashioning to mass production and popular culture
- See chocolate as influencing all levels and aspects of society

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

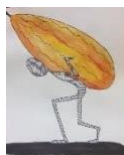
Detailed Description of Assignments:

- Visual Analysis of art object featuring a commodity, contextualization of artwork and commodity within its historical period, interpretation of contemporary viewership of object
- Research Paper:
 - Investigation of various aspects of commodity (political, social, etc.) and how artwork can be interpreted within that context.

Social Science and Interdisciplinary

Bärbel Kramer – Chemistry, Interdisciplinary and Study Abroad

(krameb@millsaps.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: For the Love of Chocolate

Instructor(s): Bärbel Kramer, Kristina L. Stensaas, possibly more

Institution(s): Millsaps College **Discipline(s):**

Chemistry, History, Sociology **Course Level:**

1000-2000

General Description of the Course (why is your course exciting for students?):

Spending 2 weeks in the Yucatán is a major experience connecting the history of south and Central American countries (Perú, Colombia, Mexico) through chocolate and by that raising awareness for the legacy of colonialism. Through food preparation (posset pH 2-8!) and chocolate analysis connecting to chemical analysis.

Student Learning Outcomes with Associated Assignments:

- Forming awareness for the legacy of colonialism through chocolate
- Social economical aspects
- Connect to chemistry through chemical analysis
- And food preparations (pH)

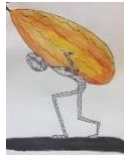
Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- Importance of pH: make orange posset, finish with bitter sweet chocolate shavings p#2.6
- Determination $\text{Ca}^{2+}/\text{Mg}^{2+}$ of): complexometric titration
- Extraction: example:
 - extract vanillin ➤ Multistep Synthesis:
 - make vanillin (kristy)
- Quantitative Analysis: HPLC for theobromine?
- $(\text{SO}_4^{2-})/\text{Ca}^{2+}/\text{Mg}^{2+}$ $\text{Ca}^{2+}/\text{Mg}^{2+}$ field kits by HACH mineral composition of chocolate
- cacao game: write critique
- final paper

John Wagner Givens – International Studies and Political Science
JohnGivens@spelman.edu



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: World Politics and Honors World Politics

Instructor(s): John Wagner Givens

Institution(s): Spelman College

Discipline(s): International Studies / Political Science

Course Level: 200 level - major requirement

General Description of the Course (why is your course exciting for students?):

The device you are reading this on is almost certainly running an operating system developed by a company headquartered on the West Coast of the United States. It was assembled, probably in China, from components from around the world, likely an LED screen from Korea and a processor from Taiwan. People are using devices just like it from Capetown to Vladivostok.

The world is global, but not equal or simple. No matter what your major, career, goals, or citizenship you will be part of a globalized world. The better you understand it, the better off you will be in your career and as a citizen.

The course considers both major subfields of International Affairs: International Relations and Comparative Politics and explores issues through the lenses of these frameworks. It also examines research methods and processes to help you describe how we know what we know. Our emphasis will be on explaining issues and assessing responses to these issues critically. This means rigorous consideration of the facts (data), processes/interconnections, and outcomes involved. From this process, we can then better understand how certain issues have arisen and why particular policy choices are made (or not made), and what viable potential alternatives there might be. While time prohibits us from adequately exploring every major global issue, we shall endeavor to dig deeply into a few of the most pressing and far-reaching.

Student Learning Outcomes with Associated Assignments:

- The overall goal of this assignment is to have students analyze the historical development of chocolate production and its connection to world politics, examining the influence of mercantilism, industrialization, civil war and terrorism, tariffs, development, and environmental impacts. ➤ Learning Objectives:

1. Evaluate the power dynamics between the metropole and periphery in the chocolate industry, considering the economic relationships and disparities between developed

- and developing countries, as well as the relationship between countries/colonies in the Global South.
2. Examine the impact of industrialization on chocolate production, analyzing how it has shaped production methods, distribution networks, and global economic relationships.
 3. Assess the political motivations and consequences of civil war and terrorism through the lens of chocolate.
 4. Investigate the role of tariffs in chocolate trade, analyzing the effects of protectionist policies and trade barriers on global supply chains and market dynamics.
 5. Explore the concept of development within the chocolate industry, examining how economic, social, and political factors have influenced its growth and contributed to disparities.
 6. Understand the environmental impact of chocolate production, considering issues such as deforestation, resource extraction, and sustainability initiatives, and their intersection with global politics. These six learning objectives capture the essential aspects of the assignment, allowing students to delve into the historical, economic, political, and environmental dimensions of chocolate production in relation to world politics.

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- Objective:
 - The objective of this assignment is to explore the historical development of chocolate production and its connection to various topics in world politics. By creating a detailed timeline, you will analyze how chocolate production has been influenced by mercantilism (especially dynamics between the metropole and periphery and relationship between colonies/countries in the Global South) industrialization, civil war and terrorism, tariffs, development, and environmental impact. This assignment aims to develop your understanding of the interplay between economic, social, and political factors in the global chocolate industry. It is a chocolate-tinted lens through which to view much of the course.

➤ Instructions:

➤ **Research:**

- Conduct thorough research on any necessary aspects related to chocolate production, focusing on its global impact and connection to world politics.
- Gather information on the following topics: mercantilism, metropole vs. periphery dynamics, industrialization, civil war and terrorism, tariffs, development, and environmental impacts from throughout the course.
- In addition to course materials use a variety of reputable sources, such as academic journals, books, and scholarly articles, to gather information.

➤ Timeline Creation:

- Create a detailed timeline that chronologically represents the key events and developments in chocolate production as it relates to subjects in this course. Each event on the timeline should include a concise description and a clear connection to one or more of the specified topics (mercantilism, metropole vs. periphery, industrialization, civil war and terrorism, tariffs, development, and the environment). Ensure the timeline is visually organized and easy to follow. The timeline should span from the origins of chocolate production to the present day.

➤ Analysis:

- Write a detailed analysis that accompanies the timeline.
 - Analyze and explain how each event on the timeline relates to the specified topics in world politics.
 - Discuss the political motivations and consequences behind key events, highlighting the economic, social, and cultural implications.
 - Explore the influence of mercantilism on chocolate production, the power dynamics between the metropole (developed countries) and periphery (lower income countries), the impact of industrialization on the industry, the role of civil war and terrorism in shaping chocolate production, the effect of tariffs on trade, and the development of fair trade initiatives.
 - Provide well-reasoned arguments and support your analysis with evidence from your research.

➤ Presentation:

- Prepare a presentation to deliver your findings to the class.
- Use visual aids, such as slides or posters, to enhance your presentation.
- Clearly communicate the key points from your timeline and analysis.
- Engage the class in a discussion by posing thought-provoking questions related to chocolate production and world politics.
- References: Include a properly formatted reference list citing all the sources you used for your research.

➤ Format:

- The timeline should be created using an appropriate software or design tool, such as Microsoft PowerPoint, Google Slides, or a specialized timeline creation platform.
- The analysis should be written in a clear and concise manner, using formal language and proper grammar.
- The presentation can be delivered using a multimedia tool of your choice, such as PowerPoint, Prezi, or any other platform that allows for visual presentation.

➤ Grading Criteria:

- Accuracy and depth of research: 20%
- Organization and clarity of the timeline: 20%
- Connection to course themes and content: 30%
- Quality and effectiveness of the presentation: 20%
- Proper citations and references: 10% ➤ **Notes:**
- Remember to follow academic integrity guidelines and properly cite all the sources you use in your research and analysis. Plagiarism will not be tolerated.
- Please let me know if you require any additional information or have any specific preferences for the timeline format or other details.

Katie Williams-Steele - Psychology
(williamsk@southwestern.edu)



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Principles of Psychology **Instructor(s):**

Katie Williams-Steele **Institution(s):** UT Austin/

Southwestern University **Discipline(s):** Psychology

Course Level: Intro (module on the Psychology of Addiction)

General Description of the Course (why is your course exciting for students?):

Broad description to the Science of Psychology and the Study of human behavior. This Course is an overview of scientific literacy, methods, and the various fields, theories and perspectives in Psych.

Student Learning Outcomes with Associated Assignments:

- Apply Psychological principles to the personal growth and other aspects of everyday life including social and global issues.
- Identify and think critically about cultural and individual differences that underline the complexities of human behavior.

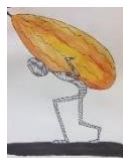
Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- “The Bliss Point” (1 day lecture)
- Food Tasting: chocolate chips, other candies?
- Group Discussion:
 - Which are most satisfying?
 - What is the optimal level or combination that creates the best taste experience?
- Interactive portions to analyze results of preference ratios.
- Design own food/beverage product that appeals to specific target audiences (while considering Bliss Point) ➤ Present/Share:
 - Explain ingredient choices and justification of how it will connect to Bliss Point.

Romi Burks - Interdisciplinary
burksr@southwestern.edu



Chocolate Covered Teaching: *The goal of the program includes creation of curricular materials using chocolate (or other relatable commodity) to explore foundational concepts across disciplines and engage and develop critical thinking in students from diverse backgrounds.*

Course Title: Does Chocolate Have a Dark Side? Science & Culture of Chocolate

Instructor(s): Romi Burks **Institution(s):**

Southwestern University **Discipline(s):**

Interdisciplinary Course Level: 1st Years

General Description of the Course (why is your course exciting for students?):

This course makes connections with chocolate across 5 themes including biological diversity, chemical and psychological Influences on human health, social justice, local and global economic impacts and artistic inspiration. In this seminar, we will collectively examine what “chocolate” means to different entities, which will point to the fact that no clear agreed upon definition of chocolate actually exists. We will then try to make sense of differences between candy and chocolate, how the overall chocolate industry is culturally constructed, and how advancements in science, consumer marketing and social justice reflect key features of our contemporary world. We will consider chocolate from a variety of perspectives that will help us to realize how “chocolate” operates both in the US and globally. Students will delve more deeply into a particular topic of chocolate by highlighting a particular bar in their tasting/paper project. In addition, this seminar will assist first year students in preparing for their college experiences by helping to develop abilities in reading, writing, critical thinking, research, informed discussion and creativity.

Student Learning Outcomes with Associated Assignments:

- After induction into the “dark side,” students can:
 - Describe the chocolate-making process from “farm/tree/pod/bean to bar” and identify specific flavors or tones from chocolate bars.
 - Differentiate between confectioners, chocolatiers and chocolate makers.
 - Understand the industry distinctions between fine flavor and mass market beans.
 - Articulate clearly connections between chocolate and multiple disciplines.
 - 1 Art, history, chemistry, neuroscience, business, marketing, psychology, philosophy, religion, political science, etc...
 - Explain the inherent difficulty involved in defining the term “species” and how that relates to the varieties of *Theobroma cacao*.
 - Discuss what “socially responsible chocolate” means and give examples.
 - Express their creativity and understanding of the course themes within chocolate class by creating a piece of original art or coming up with a marking idea.

- Deconstruct the meanings behind the dark side of chocolate.
- Experience the world through chocolate.
- Challenge their assumptions regarding the simplicity of chocolate.

Student Preparation and Resources:

- Chocolate's Dark Secrets:
 - <https://www.youtube.com/watch?v=rcf2o42txUE>
- The Chocolate War
 - <https://vimeopro.com/drsales/chocolate-war-the-82-min>
- Chocolat de Paz - Film: Peace by Chocolate
 - Bought on Amazon
- Craft Chocolate TV YouTube Channel:
 - <https://www.youtube.com/channel/UCsSBsmrITlrU6NCsnbzdQ7A>
- Fine Chocolate Industry Association (FCIA) Fine Chocolate Glossary:
 - <https://chocolateglossary.com/>

Detailed Description of Assignments:

- NEW FINAL EXAM OR FINAL PROJECT
- Students will take 3-5 bars and go through the process of dissecting the information available to them on the bars as well as on the websites of the makers.
- Then, they will come up with their own teaching plan for how they would use these bars to teach an associated topic with chocolate.
 - The format would follow along the lines of the slides used in the ACS Chocolate Covered Teaching Workshop:
 - https://docs.google.com/presentation/d/1BNbQrx_g0RlpqIE1kyfNTDi7NFWedTB_Zvgv_1-6yHIU/edit?usp=sharing
 - Create slides/visuals with pictures of the front and back label, the bar itself as well as any information on the inside of the package;
 - For each bar, identify the basics of your bars: origin, percentage, ingredients, certifications, product practices;
 - Then do a “deep dive” on the each element of each bar’s packaging and identify interesting content, gather all vocabulary (look up terms as necessary) and provide a general impression;
 - Compare and contrast across the bars;
 - Brainstorm topics that come to mind after a “semester” of chocolate class.
 - Identify the best of the teaching topics and formulate actual student learning outcomes.
 - Design a short teaching plan and an assessment to accomplish the task.
 - Ways to vary this exercise:
 - Focus on “science”
 - Focus on “business”
 - Change target teaching audience to “high school students” or “grandparents”

- Addresses 4 of the general learning outcomes. In addition:
 - Promotes synthesis of information learned in class
 - Increases retention of information learned through teaching to others
 - Cultivates critical thinking by looking for connections between possible disparate topics
 - Provides experience in lesson planning and assessment design

Final ACS Report



**ACS Final Grant Report Form
Grant Cycle 14**

Due by 5 pm EST on the date established in your grant award letter, and due via email (PDF/Word) to grants@acsouth.edu

- Complete this form in no more than five pages.
- Attach your final financial report in a separate document and submit it along with your report to grants@acsouth.edu.
- Note that portions or the entirety of your final report may be reprinted on the ACS grants webpage.

Name of project lead: Dr. Romi Burks
 Campus: Southwestern University
 Project title: *Chocolate Covered Teaching: An Innovative Approach to Using Commodity-Based Goods to Foster Cross-disciplinary Critical Thinking Skills in Undergraduates*
 Today's date: August 8, 2023

PROJECT PARTICIPANTS (Please add rows if necessary.)				
Name	Title/s	Dept. or office	Office phone	Campus e-mail
1. Primary project lead: Dr. Romi Burks	Professor of Biology, Southwestern University	Department of Biology, Fondren Jones 212	512-863-1280	burkrs@southwestern.edu
2. Dr. Cory Toyota	Associate Professor of	Department of Chemistry and Biochemistry	601-974-1404	toyotcg@millsaps.edu

	Chemistry, Millsaps College			
3. Dr. Luisa Arrieta Fernandez	Assistant Professor of History, Spelman College	The Camille Olivia Hanks Cosby, Ed.D. Academic Center - Room 414	(860) 230- 1431	luisaarrieta@spelman.edu

I. Project summary

Briefly describe the purpose, intended goals, and major activities of your project.

We sought to create a community of ACS faculty interested in using commodity-based goods (such as chocolate) to engage students in critical thinking and reflection by developing innovative pedagogical ideas. We created a workshop that encouraged faculty to consider ways in which they could use chocolate to teach foundational concepts and make connections across disciplines. Including three facilitators (Burks, Toyota, Fernandez) and the ACS Program Officer (Neville), our workshop consisted of 18 participants from 7 different ACS institutions and at least 10 different disciplines (art, art history/political science, biology, chemistry, German, psychology, computer science, English composition, international studies, history). Activities included learning to taste fine chocolate through a savoring process, watching films that provide insight into the dark side of chocolate, and brainstorming within and cross disciplinary connections for teaching with chocolate. In addition to creating a network of faculty interested in this type of professional development, project outcomes included descriptions of teaching plans and some additional contributions to the Fine Chocolate Glossary project.

II. Attainment of goals – From original proposal

Explain the steps you took to achieve and evaluate the success of *each* project goal. Provide details regarding the tools and methods used to measure each goal and the extent to which, based on those measurements, each goal was met.

Original Goal	Assessment Tool	Assessment Goal	Timeline	Result	Reflection
Teach and learn from faculty across the diverse institutions of the ACS	Percentage of institutions engaged.	75% of ACS institutions will have a faculty participant (12/16)	Deadline: Date of Workshop	FELL SHORT ON GOAL We had 7/16 (44%) institutions represented although we did email bursts and contacted people 1-on-1	Possibly over-ambitious but also would be interesting to contact faculty from other ACS schools to see if they heard more about the program.

* Southwestern, Spelman, Morehouse, Trinity, Hendrix, Millsaps, and University of Richmond. We do have follow-up plans for some additional faculty that indicated they could not attend the workshop.

Original Goal	Assessment Tool	Assessment Goal	Timeline	Result	Reflection
---------------	-----------------	-----------------	----------	--------	------------

Increase faculty engagement with innovative teaching (i.e., template)	Teaching template to backward design an exercise that incorporates chocolate to achieve a particular learning objective.	100% start their template by end of workshop; 90% complete their template by Sept. 1 st . 75% implement their template in their course in the first year.	1 st deadline: Wkshp 2 nd deadline: 9/1 3rd deadline: Spring 2024 semester	GOAL MET 100% of participants started their template. GOAL MET As of June 14th, we have 16/17 (94%) Teaching Templates received so the Sept. deadline will work.	IMPLEMENT - IN PROGRESS: Will follow up as to people using their teaching templates over the year.
---	--	--	--	---	--

Original Goal	Assessment Tool	Assessment Goal	Timeline	Result	Reflection
Create a cross-institutional ACS community of educators willing to share ideas (i.e., list-serve, webpage)	Gathering analytics from list-serve or webpage Reaching out to all ACS institutions to make sure faculty know about this group	100% of the workshop participants join the list-serve. 100% of the workshop participants invite a colleague to join the list-serve 50% of the participants and 25% participants engage with the list-serve	1 st deadline: Wkshp 2 nd and 3 rd deadline: September 1 st	GOAL REACHED All participants indicated an interest to continue to network. IMPLEMENT - IN PROGRESS: We are still figuring out how to best set up post workshop communications	We ended up with a really nice balance of diversity of interests as well as areas of overlap. The key will be to build in some structure to follow-up activities as well as provide additional resources.

Original Goal	Assessment Tool	Assessment Goal	Timeline	Result	Reflection
Provide resources for faculty to employ chocolate (or similar commodity)	Collaboratively designed structure for a case study appropriate for the liberal arts	5 case studies across at least 5 disciplines	Sept 1st.	GOAL IN REACH 8 of 18 Participants have agreed to author 7 Fine	We changed “Case Studies” to Glossary Entries. COMPLETED

pedagogy (case studies)	and undergraduates			Chocolate Glossary entries. GOAL REACHED The disciplines include chemistry, business, art, history, computer science and English composition.	Cory, Wolf, Baebel - 2 entries; antioxidant and flavonoids Jaye & Corey – BIPOC IN PROGRESS John - B-Corp Hope - Chocolate (medium) Luisa - plantation Carmen – vanillin
----------------------------	-----------------------	--	--	---	---

Original Goal	Assessment Tool	Assessment Goal	Timeline	Result	Reflection
Prompt response coded for complexity in thought administered to students before and after the case study incorporation.	80% of students increase their understanding of complexity by at least one level.	1 year as faculty incorporate new ideas into classes.	IMPLEMENT - IN PROGRESS:	We should send a reminder to faculty starting to incorporate things into their courses to consider this as a metric for assessment.	

III. Impact of project

Explain the impact your project had on relevant constituencies (e.g., students), structures, (e.g., a major program), processes (e.g., community engagement), and/or relationships (e.g., consortial partnerships).

Students: At a minimum, this workshop will ultimately engage students in 15 new modules that foster critical thinking using chocolate as a model across seven different ACS institutions.

Consortial partnerships: This workshop also utilized the expertise of its participants to provide insight into key terms used in the chocolate industry through authoring entries for the [Fine Chocolate Glossary](#). Faculty from disparate departments (English, Computer Science) at Morehouse and Spelman College (respectively) came together to write an important entry for their respective student demographics as well as to provide this term in context of chocolate – something that everyone in the consortium can use. In addition, the workshop provided a network to reach out to like-minded individuals interested in engaging their students using innovative pedagogy.

Structures – Fine Chocolate Glossary: The Fine Chocolate Industry Association provides this resource without cost and open source in an effort to provide a common language for the fine

chocolate industry. This project gives faculty an example of a process that they can share with students and represents a living entity with which people can continue to engage.

IV. Consortial (ACS-wide) value of the project

Describe how your project results can or will strengthen ACS, e.g., via the dissemination of a final report, the future training of campus leaders, or the building of an inclusive community of practice.

We put together a full report showing our agenda and planning process along with templates for the activities we created. At this time, our outcomes include three co-authored entries for the Fine Chocolate Glossary and we expect four more solo-authored entries. We had two co-facilitators that gained experience in workshop dynamics under the guidance of a more experienced faculty member. We will also participate in the ACS Summit which will give us an additional opportunity to disseminate our experiences.

V. Lessons Learned

Describe the surprises, challenges, and lessons learned during the project, e.g., is there something you are very glad you did or would do differently? Did you face obstacles that called for creative problem-solving? What would have made the project even more successful?

Surprises: The connections that we made with chocolate focused in Columbia given the participation of Dr. Luisa Fernandez made a big impact on the group which we did not anticipate. In addition, the level of engagement in which the participants could communicate about chocolate just after two days came as a surprise. It came as a little bit of a surprise how much the momentum slows following the workshop.

Challenges: The biggest challenge came in trying to find a balance between providing sufficient background, content or time for debriefing with allowing participants enough space to absorb, reflect and interact with their fellow participants. We packed the workshop effectively into two days (6 hours Thursday; 10-12 hours Friday; 6 hours Saturday). I expect that we could have used a little more time.

Lesson Learned: We needed to do more to mix things up between groups of people – although that comes at a cost of building relationships with the people sitting close to you as well. We likely needed another day to spread out the activities and have more room for active-learning. Supporting the travel costs of the attendees made it possible for broader and greater participation, especially from underrepresented groups.

VI. Next Steps

Explain what you intend to do with/how to you intend to use or build on the results of your project.

We would hope to be allowed the opportunity to replicate this workshop, or at least parts of it, in the future. Burks will continue to work with the participants to complete authorship of entries for the Fine Chocolate Glossary and encourage them to consider additional contributions. In addition, the material and discussions that occurred at this workshop feed directly into the work of Burks and interests in writing a mainstream book about chocolate (*Chocolate Speaks Volumes*). Ultimately, we would like to build a teaching network associated with chocolate and other commodity goods.

VII. APPENDIX: Feedback/suggestions for the ACS grant program (optional)

As of June 14th, we have had 10 respondents to our post-workshop survey:

<https://docs.google.com/spreadsheets/d/1CSrnVXdm52pRjOgiQPskc83v44FS7cixboTXN2v5kC8/edit?usp=sharing>

This was an awesome experience! I learned so much about chocolate and it led to discovering new ways to approach teaching composition.

Outstanding!

Awesome, learned a lot and met great people

I can count on one hand the number of times (and people) I've had the opportunity to talk to. about teaching and swap both ideas and stories about experiences in the classroom. Southwestern is such an amazing community for this but I also really appreciated this chance to meet other faculty that care so much about teaching and are so willing to share their many years of experience and wisdom. I think I left this experience with 1) more confidence in my own teaching and methods 2) a new appreciation for chocolate as a craft (rather than as a delicious candy) and most importantly 3) new ideas and energy to revamp certain aspects of my classes including integrating chocolate into my lesson planning. I really began this weekend with no early idea how I could ever integrate chocolate into a psychology classroom but I left day 3 with a long list of short modules and activities that incorporate chocolate which is really incredible. In general, I think more guided and/or organized discussions around classroom activities and assignments with folks in similar disciplines would have been helpful in refining the final deliverable. The cross-discipline talk was invaluable and I would wish to keep that but incorporate some within-discipline talk as well, if possible :-)

It was a great experience to meet other faculty from different ACS courses. I'm excited about future collaborative projects!

Honestly this was great!

I thought the workshop was great overall; I now have many ideas on how to add chocolate into my courses.

Excellent. The workshop team worked very well together; I'd appreciated the step-by-step scaffolding of the workshop; I liked the mix of disciplines among participants and the workshop leaders; the writing prompts were surprisingly emotional for me [not a bad thing, but I didn't share]; I hope the outcomes of the workshop extend beyond the workshop itself (I don't think I'll write an entry for the Glossary).

This was a very good workshop. I appreciated that we had defined outcomes that we were working towards.

This was an amazing workshop. I learned so much and I met some amazing people in the process. I hope that Romi and the group will continue to do more of these. The only change I would make is to have more interactive activities - after several long days, my brain was tired of sitting and listening. The interactive times we had felt a bit rushed. I also felt the days were overly scheduled - i needed a bit more alone time to just decompress.