

# ***EATING INSECTS***



# **DETROIT**

MAY 26-28, 2016

WAYNE STATE UNIVERSITY

*Exploring the culture of insects as food and feed*

PRESENTED BY

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University of Georgia Department of Entomology

## FEATURED SPEAKERS

**We have seven featured speakers throughout the conference programming. Each individual has made significant contributions to the understanding the culture of insects as food and feed, and we are lucky to have them here to speak with us.**

### **Ricardo Carvajal**

Ricardo Carvajal is a director at Hyman, Phelps & McNamara, P.C., a law firm based in Washington DC that specializes in FDA and related regulatory matters. Carvajal advises clients on the regulatory status of ingredients and finished products, and provides guidance on compliance with labeling and advertising requirements, as well as representation in advertising-related disputes. He also helps clients interpret and comment on the implementation of new requirements, such as those arising under the Food Safety Modernization Act. He applies his subject matter expertise to corporate transactions, issuing opinions and conducting due diligence for acquisitions and initial public offerings. He is a member of the American Bar Association and the Food and Drug Law Institute.

**Talk: “U.S. regulation of insect-derived foods: Past, current, and future” Thursday at 4:00pm**

### **Pat Crowley**

Pat Crowley is Founder and CEO of Chapul, a company revolutionizing the food industry with their award winning cricket bars. Fueled with a passion for a more sustainable future, Pat is breaking down cultural barriers having introduced the first commercial product with cricket flour into the US market. From handmaking energy bars in a small kitchen, to a crowd-funded start-up, then on to winning an investment from Mark Cuban on the hit TV show, Shark Tank, Pat has created an international presence and ignited a revolution that is challenging the boundaries of food.

**Talk: “From Fringe to Mainstream: Perspectives on the growth of an edible insect industry” Friday at 2:40pm**

## **Meghan Curry**

With a master's degree in entomology, Meghan Curry founded Bug Vivant and co-founded EntoCall. To get bugs on American menus, Curry has coordinated outreach events, created edible insect farming curriculum, and produced gourmet edible insects like waxworms. With her BugWall endeavor, Curry spent 13 days solo climbing, vertical living, bug eating, and social sharing in order to increase edible insect awareness.

**Talk: "Carabiners and Crickets: lessons from the BugWall" Friday at 10:50am**

## **Ana C. Day**

Ana Day is a Venezuelan living in Switzerland and founder of 4Ento. She spends her time educating and speaking about the opportunities of Edible Insects for a more sustainable and responsible future. Her goal of creating an education platform to act as a catalyst for finding global solutions to combat the threatening world nutrition crisis. As an ECO-AMBASSADOR, Day sees her role as a partner to startups, established businesses, NGOs and institutions in driving forward the Edible Insect Movement from niche to a mainstream, sustainable, responsible and accepted protein source for feed and food.

**Talk: "4ento - Our Team's Journey" Saturday at 10:10am**

## **Jarrold Goldin**

As a Chiropractor and Chiropractic educator for 20 years, Goldin witnessed the impact that food can have on health. After researching the many scientific studies about entomophagy, Goldin was inspired to learn about the incredible health and environmental benefits that insect protein provides over more traditional forms of protein, like beef & chicken. Insects are packed with not only protein but so many rich vitamins, minerals and fibre to name a few, all with an incredibly sustainable carbon footprint. It is a perfect solution for those interested in a lifestyle of health and sustainability. In 2014 Jarrod Goldin joined his brothers Darren and Ryan, who have 10 years experience farming insects with their business Reptile Feeders, to start Entomo Farms, North America's first and largest insect farm, dedicated to raising insects, specifically for human consumption. That is the history of the Future of Food.

**Talk: "Entomo Farms: Contributing to the Global Growth of Entomophagy through the Farming and Processing of Cricket Protein" Thursday at 1:30pm**

## **Jeff Tomberlin**

Dr. Jeffrey Tomberlin is the laboratory director and principal investigator of the FLIES (Forensic Laboratory for Investigative Entomological Sciences) Laboratory at Texas A&M University. Dr. Tomberlin received his doctorate in 2001 from the Department of Entomology at the University of Georgia. He has been a faculty member with Texas A&M University since 2002. Dr. Tomberlin's research program is exploring the use of insects to convert materials of no value (e.g., food and animal wastes) into usable resources, such as protein that can be used as feed in the livestock, poultry, and aquaculture industries, while protecting the environment from harmful pollutants including nutrients and pathogens that can contaminate water and land as well as noxious odors that pollute the air. His presentation will explore the major concerns related to food production over the next 40 years and how insects could be used to reduce pressures associated with food production.

**Talk: "Environmental Profiting from Decomposition: Tales of an Entomologist"**

**Thursday at 10:30am**

## **Paul Vantomme**

Paul Vantomme graduated as Agriculture Engineer in 1977 at the Gent State University (Belgium). Since 1995, he has been in charge of the UN - FAO's 'Non Wood Forest Programme', which has been instrumental in raising awareness on the huge potential of wild-gathered foods and insects as a valuable protein source to supplement human diets or for use as animal feed stock. He set-up a global programme at FAO in 2008 for the promotion of insects for food/feed security and organized a series of international expert meetings and Conferences bringing together — for the first time ever at the global level — experts, government officials and entrepreneurs from different aspects of insect rearing and processing. He developed the UN - FAO landmark report: 'Edible insects: future prospects for food and feed security'

**Talk: "Opportunities and constraints of farming insects for food: a global review"**

**Saturday at 12:30pm**

Make sure to visit with each of our great vendors at the Friday night expo!

**Vendor Expo**  
**Friday May 27<sup>th</sup>, 7-9pm**  
**McGregor Conference Center**  
**Featuring:**

All Things Bugs, LLC  
(Griopro cricket powder)

Aspire Food Group

Bugsolutely

C-Fu Foods

Chapul

Critter Bitters

Detroit Ento

Ento eats.ca

EntoMarket

Entomo Farms

EnviroFlight

Exo

Good Grubs Inc

Gryö Incredible Foods

Korean Edible Insect Lab

Little Herds

LIVIN farms

Micronutris

Missouri Entomophagy

Nordic Insect Economy, Ltd

One Hop Kitchen

Poda Foods

Rocky Mountain Micro Ranch

Seginus Farms, LLC

uKa protéine

Zoic Bar

All programming to take place in the Community Arts Auditorium unless otherwise noted

<b>THURSDAY MORNING</b>	
8:00-9:00	Coffee and light breakfast served
9:00-9:20	Welcome to WSU Opening Remarks
<b>SESSION 1</b> 9:20-9:30	“Detroit Urban Entomoculture” Anthony Hatinger and Theodore Kozerski Detroit Ento
9:30-9:40	“Edible insect ingredients: Innovation for functionality” Lee Cadesky C-Fu Foods / One Hop Kitchen
9:40-9:50	“Ento outreach” Robert Nathan Allen Little Herds
9:50-10:00	“Intention to eat edible insects: results of a TPB study” Giovani Sogari <sup>1</sup> , Menozzi D <sup>1</sup> , Simoni E <sup>1</sup> , Veneziani M <sup>2</sup> , Mora C <sup>1</sup> <sup>1</sup> Department of Food Science, University of Parma, Parma, Italy <sup>2</sup> Department of Economics, University of Parma, Parma, Italy
10:00-10:10	“Insects as Food Between Old and New Scenarios: the European Perspective” Francesca Lotta <sup>1</sup> and Giovani Sogari <sup>2</sup> <sup>1</sup> Bird & Bird International Law Firm <sup>2</sup> Department of Food Science, University of Parma, Parma, Italy
10:10-10:20	Session 1 Discussion
10:20-10:30	Water Break
<b>Featured Speaker</b> 10:30-11:20	<b>Jeff Tomberlin</b> <b>Texas A&amp;M University</b> <b>“Environmental Profiting from Decomposition: Tales of an Entomologist”</b>
11:20-11:35	Water break
<b>SESSION 2</b> 11:35-11:45	“Outreach and Education to Increase Social Acceptance of Entomophagy: Reaching and Teaching the Young and Young at Heart at the Community and University level” Donald L. Sudbrink Jr. and Amy Wright <sup>1</sup> Department of Agriculture, Austin Peay State University <sup>2</sup> Department of Languages and Literature, Austin Peay State University
11:45-11:55	“Food or feed - and why it matters?” Santtu Vekkelin Nordic Insect Economy Ltd
11:55-12:05	“Altering presented information and adding cricket flour do not affect liking for chocolate chip cookies” Scott Breen, Bakke AJ, Hayes JE, Stubbs C Pennsylvania State University
12:05-12:15	“Eat bugs, dream bugs, live bugs: Raising the hedonic value of edible insects : Vision from an <i>Ento-tarian</i> ” Florian Nock LIVIN Farms
12:15-12:25	Session 2 Discussion

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<b>THURSDAY AFTERNOON</b>	
12:25-1:30	LUNCH
<b>Featured Speaker</b> 1:30-2:20	<b>Jarrold Goldin</b> Entomo Farms “Entomo Farms: Contributing to the Global Growth of Entomophagy through the Farming and Processing of Cricket Protein”
2:20-2:30	Water Break
<b>SESSION 3</b> 2:30-2:40	“Legislative support of edible insect industry in Korea” Chuleui Jung, Ghosh S Department of Bioresource Sciences, Andong National University
2:40-2:50	“The Farm Terroir SOP / WI System Geoffrey Tolle
2:50-3:00	“American Consumer Perceptions of Entomophagy and Ethical, Nutritional, and Sensory Motivators to Increase Acceptance” Cody Stubbs, Jurczyk P, Breen S, Ohm J, Bakke A, Haye J Pennsylvania State University
3:00-3:10	“First to Market: Experiences of a Start-up Edible Insect Ranch” Wendy Lu McGill Rocky Mountain Micro Ranch
3:10-3:20	“Insect-based Food: European Market as Blueprint for the US Market” Micronutris, USA JP Clement
3:20-3:30	Session 3 Discussion
3:30-4:00	Coffee Break
<b>Featured Speaker</b> 4:00-4:50	<b>Ricardo Carvajal</b> <b>Hyman, Phelps &amp; McNamara, P.C.</b> “U.S. regulation of insect-derived foods: Past, current, and future”
4:50-5:00	Water break
<b>5:00-5:30</b>	<i>The Gateway Bug</i> preview and Q&A with Johanna B. Kelly and Cameron Marshad
5:30	Closing Remarks
6:00-8:00	VIP Reception for presenters and vendors (McGregor Memorial Conference Center)



All programming to take place in the Community Arts Auditorium unless otherwise noted

	FRIDAY MORNING
8:00-9:00	Coffee and light breakfast served
9:00-9:10	Opening remarks
<b>SESSION 4</b> 9:10-9:20	“Critical Concepts for the Insect Based Commodity Industry Including Processing” Aaron T. Dossey All Things Bugs, LLC
9:20-9:30	“From Disgust to Desire?: An Affective Reading of Entomophagy” Laura Shine Concordia University
9:30-9:40	“Survivability, Growth Performance and Nutrient Composition of African Palm Weevil ( <i>Rhyncophorus phoenicis</i> ) Reared on four Different Substrates” Cordelia Ifeyinwa Ebenebe <sup>1</sup> , Okpoko, VA, <sup>2</sup> Ufele, AN <sup>3</sup> <sup>1</sup> Department of Animal Science and Technology, Nnamdi Azikiwe University <sup>2</sup> Biological Conservation Unit, Department of Zoology, Nnamdi Azikiwe University <sup>3</sup> Animal Physiology Unit, Department of Zoology, Nnamdi Azikiwe University
9:40-9:50	“Insects as innovative raw material in rainbow trout ( <i>Oncorhynchus mykiss</i> ) feeds” Laura Gasco <sup>1</sup> , Renna M <sup>1</sup> , Schiavone A <sup>2</sup> , Meneguz M <sup>1</sup> , Lussiana C <sup>1</sup> , Zoccarato I <sup>1</sup> , Gai F <sup>1</sup> Department of Agricultural, Forest and Food Sciences, University of Torino <sup>2</sup> Department of Veterinary Sciences, University of Turin <sup>3</sup> Institute of Science of Food Production, National Research Council
9:50-10:00	“Beyond the ‘yuck factor’: towards an expanded definition of Western ‘consumer acceptance’ of insects as food” Jonas House University of Sheffield
10:00-10:10	Session 4 Discussion
10:10-10:40	Poster presenters to stand by their posters for comments/questions (McGregor Conference Center)
10:40-10:50	Water break
<b>Featured Speaker</b> 10:50-11:40	<b>Meghan Curry</b> <b>Bug Vivant</b> <b>“Carabiners and Crickets: Lessons from the BugWall”</b>
11:40-11:50	Water Break
11:50-12:40	<b>Discussion Panel: Food Ethics and Edible Insects</b>
12:40-1:40	LUNCH

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<b>FRIDAY AFTERNOON</b>	
<b>SESSION 5</b> 1:40-1:50	“Perceptions of Edible Insects as a Protein Source: A Pilot Study” Alison Kirkham <sup>1</sup> , O’Haire E <sup>1</sup> , Liceage AM <sup>2</sup> <sup>1</sup> Department of Comparative Pathobiology, Purdue University <sup>2</sup> Department of Food Sciences, Purdue University
1:50-2:00	“Death and Water: A Dissection of Environmental Damages Disaster Response” Kevin Bachhuber Big Cricket Farm
2:00-2:10	“Bugs save the world” Glen Courtright EnviroFlight
2:10-2:20	“My Twenty Years as a Bug Eater” David George Gordon <i>The Eat-A-Bug Cookbook</i>
2:20-2:30	Session 5 discussion
2:30-2:40	Water break
<b>Featured Speaker</b> 2:40-3:30	<b>Pat Crowley</b> <b>Chapul</b> <b>“From Fringe to Mainstream: Perspectives on the growth of an edible insect industry”</b>
3:30-3:50	Coffee Break
<b>SESSION 6</b> 3:50-4:00	“Thailand and beyond: Creating a model for entomophagy education” Kiah Brasch Rustle Up Some Grub
4:00-4:10	“The Influence of the Consumer Knowledge and Trust on Risk-Benefit Perceptions of Edible Insects” Tiffany Shin Jungyoung <sup>1</sup> , Baker M <sup>1,2</sup> , Kim YW, Kang, SR <sup>3</sup> , Choi GI <sup>3</sup> <sup>1</sup> Global Academic Research & Foreign Public Relations at the Korean <sup>2</sup> University of Massachusetts Amherst <sup>3</sup> Korean Ministry of Agriculture, Food, and Rural Affairs
4:10-4:20	“Edible insects contribute to food security in Africa” Séverin Tchibozo <sup>1</sup> and Patricia Mergen <sup>2</sup> <sup>1</sup> CRGB, <sup>2</sup> Royal Museum for Central Africa (RMCA); Botanic Garden Meise (BGM), Belgium
4:20-4:30	“Insects in Thailand and South-east Asia, from Feed to Food, a local regional and international potential” Nathan Preteseille and Massimo Reverberi Bugsolutely
4:30-4:40	“Cocoon Formation, Pupation and Adult Emergence of African Palm Weevil ( <i>Rhyncophorus phoenicis</i> ) Reared on Six Different Substrates” Obinna Valentine Okpoko <sup>1</sup> , Ebenebe CI <sup>2</sup> , Ufele AN <sup>3</sup> , Amobi AI <sup>1</sup> <sup>1</sup> Biological Conservation Unit, Department of Zoology, Nnamdi Azikiwe University <sup>2</sup> Nnamdi Azikiwe University <sup>3</sup> Animal Physiology Unit, Department of Zoology, Nnamdi Azikiwe University
4:40-4:50	“Critter Bitters: Leveraging the power of design to create behavior change” Julia Plevin & Lucy Knopps
4:50-5:00	Session 6 discussion
7:00-9:00	Vendors Expo (McGregor Conference Center)

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	SATURDAY MORNING
8:00-10:00	Coffee and light breakfast served
8:00-10:00	<b>North American Edible Insects Coalition Meeting - All Welcome</b>
10:00-10:10	Opening Remarks
<b>Featured Speaker 10:10-11:00</b>	<b>Ana C. Day</b> <b>4ento</b> <b>“4ento- Our Team’s Journey”</b>
11:00-11:10	Water break
<b>SESSION 7 11:10-11:20</b>	“Entomophagy from a Humanities Perspective” Dave Gracer Community College of Rhode Island
11:20-11:30	“Third Millennium Farming: An economically competitive approach to expanding Urban Agriculture” Jakub Dzamba McGill University
11:30-11:40	“From Trepidation to Trend: The role of product design in fostering acceptance of entomophagy” Sarah JS Wilner Wilfrid Laurier University
11:40-11:50	“The Anthropology of Insects as Food: Julie Lesnik Department of Anthropology, Wayne State University
11:50-12:00	“The Bug Banquet: Perceptions of Edible Insects” Marianne Shockley and Gillian Caudill Department of Entomology, University of Georgia
12:00-12:10	Session 7 discussion
12:10-12:30	Coffee Break
<b>Featured Speaker 12:30-1:20</b>	<b>Paul Vantomme</b> <b>United Nations Food and Agriculture Organization</b> <b>“Opportunities and constraints of farming insects for food: a global review”</b>
1:20-1:30	Closing remarks and final thank-you

<b>Poster Presentations (McGreggor Conference Center, Friday morning 10:10-10:40)</b>
<p>“A Semiotic Approach to Entomophagy: The Language, Localization, and Reimagining of Insects as Foodstuffs” Ashleigh Ali</p>
<p>“The biological pathways by which insect consumption may alleviate moderate acute malnutrition in mice” Rachel Bergmans, Malecki K, Rey F, Stull V University of Wisconsin-Madison</p>
<p>“Pilot project for insect protein production for poultry feed” Jaime Gaviria Tecnologo Agropecuario, Gaviagro SAS, Colombia</p>
<p>“Earning a "Minor" in Insects as Food ” Dominique Goulet Faculty of Land and Food Systems, University of British-Columbia</p>
<p>“Primates and Insects: An Evolutionary Perspective” Robert C. O’Malley and Julie J. Lesnik <sup>1</sup>George Washington University <sup>2</sup>Wayne State University</p>
<p>“Edible Insects in Abia State, Nigeria: uses and prospects” Okore, Oghale O’woma., Ubiaru, Prince Chigozirim., Ekedo, Mathias. Chukwuebuka., Uzodimma Kelechukwu and Chikere Christian Michael Okpara University of Agriculture Umudike, Abia State, Nigeria</p>
<p>“Pest to Plate” Ryan Reynolds and Francine McCullough Pennsylvania State University</p>
<p>“Evaluation of insect meals metabolizable energy for poultry diets” Achille Schiavone<sup>1</sup>, De Marco M<sup>1</sup>, Renna M<sup>2</sup>, Lussiana C<sup>2</sup>, Meneguz M<sup>2</sup>, Zoccarato I<sup>2</sup>, Gai F<sup>3</sup>, Gasco AL<sup>2,3</sup> <sup>1</sup>Department of Veterinary Sciences, University of Turin <sup>2</sup>Department of Agricultural, Forest and Food Sciences, University of Torino <sup>3</sup>Institute of Science of Food Production, National Research Council</p>
<p>“Light Intensity and Mating of the Black Soldier Fly” John C. Schneider Mississippi State University</p>
<p>“Investigating growth and nutritional characteristics of Tenebrio molitor reared on diets of varying quality” Ellen Tetlow, Parr T, Hardy I, Greenhalgh C, Salter AM Nutritional Sciences, University of Nottingham, UK.</p>
<p>“The emergence of a new agri-food sector: a strategic workshop for stakeholder engagement to assist upcycling of organic wastes for the production of novel animal feed ingredients” Grant Vandenberg Dép des sciences animales, Université Laval</p>
<p>“Entomophagy in the Wild West, the struggles of eating insects in Wyoming” E. Wilson University of Wyoming</p>

## LUNCH

**Monkey Business** food truck brings you all the best food you could ever ask for on four wheels.

For our conference, they will be featuring a David George Gordon recipe each day!

Find the truck outside the Community Arts Building each day during lunch.

Other dining options on campus include

**Wayne State Student Center:**

Starbucks: M-Thur-7:30am-7pm, Fri-7:30am-5pm, Sat-9:30am-4pm

Taco Bell: M-Thur-10:30am-5pm, Fri-Sat-10:30am-3pm

Panda Express: M-Thur-10:30am-5pm, Fri-10:30am-3pm, Sat-closed

Mad Anthony General Store: M-Fri-8am-8pm, Sat-9:30am-4:30pm

Other options around campus

Subway: M-Thur-10:30am-4pm, Fri-10:30am-3pm, Sat-closed

Dunkin Donuts: M-Thur-7:30am-3pm, Fri-7:30am-2pm, Sat-closed

## NOTES

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