W-4122 Multi-State Group: Beneficial and Adverse Effects of Natural

Chemicals on Human Health and Food Safety

**2021 Annual Meeting – Santa Fe, New Mexico**

**La Fonda on the Plaza, Stiha Room; 100 East San Francisco St., Santa Fe, New Mexico 87501**

**Also virtually via:** [https://zoom.us/j/5546099373?pwd=YnNrSTVKbGpqTjlnL2Npd0pSQWpZUT09](https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fzoom.us%2Fj%2F5546099373%3Fpwd%3DYnNrSTVKbGpqTjlnL2Npd0pSQWpZUT09&data=04%7C01%7Cedelgad%40nmsu.edu%7C02e541f90c044e6ae7df08d98cd145f4%7Ca3ec87a89fb84158ba8ff11bace1ebaa%7C1%7C0%7C637695652716433478%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=N2dFlLrcy4uUgRZOFeJfgyV3FPuSq2%2B19SPXnBW1h64%3D&reserved=0)

**Meeting Minutes**

**Wednesday October 13, 2021:** Arrive at La Fonda on the Plaza, Santa Fe, NM

6:30 pm Several members met hotel lobby for group dinner

**Thursday October 14, 2021:**

8:00-8:15 am Meeting started by Efren Delgado with 7 members in attendance in-person, 11 virtually

- Dr. Chan – (NIFA representative for W4122, attending virtually) was introduced and expressed support for the group and our initiatives moving forward.

8:20- 9:00 amIntroduction by Dave Williams and update from Chris Pristos

-Dr. Williams announced his pending retirement and expressed his gratitude to the W4122 group for many years of stimulating interactions and productive collaborations.

- Dr. Pritsos discussed recent meetings with USDA/NIFA leadership that give him a positive outlook on NIFA funding and AES support moving forward under the new NIFA director, Dr. Castillo. This includes an Ag research advocacy initiative $3.65B to help with over 11B in deferred maintenance to ag universities.

- Announced W4122 multistate group renewal due Jan 15 2022 (reviewed in spring). W5122 has been created by Bret Hess, will designate 1-2 project editors to manage this directly on the website (Chicco and Weir)

- Attending member introductions with brief summary of present research interests

**State Reports: (bold** attended in person**)**

9:00-9:20 Jacques Izard **(**Univ of Nebraska)

Presented work on dietary fiber intake, digestive MB and chronic systemic inflammation

Testing the hypothesis that higher dietary fiber intake can decrease inflammation;

Analysis of stool from human participants in *Health professionals follow up study*, identifying microbe species associated with recent intake of dietary fiber and lower serum marker of inflammation (CRP).

9:20-9:40 **Claudia Susanne** (Oregon State University)

Presented work on MS based approaches for exploring biological systems, in particular dietary interaction with gut microbiome generating xenobiotic ligands for FX receptors to combat obesity and MSx; XN derivatives appear to impact bile acid/lipid metabolism, likely responsible for health benefits in mice.

9:40-10:00 **Efren Delgado** (New Mexico State)

Presented work on developing methods for extraction of bioactive compounds from sugarcane processing waste (bagasse), characterized bioactive phenolic compounds and examined their antioxidant and antimicrobials properties, and determined their shelf-life and stability following prolonged preservation methods to inform future use in functional food production;

10:20-10:40 Break

10:50-11:40 **Chi Chen** (University of Minnesota)

Presented work on the metabolic effects of bioactive components of processed wheat bran – fiber phytochemicals and lipids; developing method for ‘functionalizing’ insoluble fiber from wheat bran to enable activity of its bioactive components. Evaluated impact of these bioactive components as antioxidant molecules and modulators of lipid metabolism in mice.

11:35-12:00 **Mohit Verma** (Purdue)

Presented work on analysis of specific carbohydrates present in human milk – and how these impact pathogenic and ‘healthy’ gut microbe growth ; also presented on a novel COVID diagnostic tool for detecting SARS-Cov2 in human saliva.

12:00-12:20 Dave Williams (Oregon State Univ)

Presented work on the pharmacokinetics of micro-dosing of carcinogenic benzapyrines known to be present in nearly all foods in humans, and the impact of Brussel sprouts and a dietary supplement (DIM) on its bioavailability and metabolism. The goal being to discover bioactive nutrients that potential reduce cancer risk.

12:40-2:00 Group Lunch at Hotel

2:00-2:35 Rachel Kopec (Ohio State University)

Presented updates on her work on the interactions of dietary nutrients and bioactive compounds, specifically investigating the role of dietary vitamins A and D absorption in the risk for metabolic syndrome, and investigating synergistic interactions of iron and chlorophyll to develop methods for enriching the iron content in plant-based foods.

2:40-3:10 **Jay Whelan** (Univ of Tennessee)

Presented work on synergistic effects of combined bioactive herbal extracts on their anti-obesity, anticancer and cardiovascular protective effects. Also discussed ideas regarding use of a nutraceutical Nrf2 activators (Zyflamend) for treatment of cancer and inflammation, and the importance of human equivalent scaling in translational studies using rodent models.

3:10-3:40 **Adam Chicco** (Colorado State Univ)

Presented work on use of an ovine model for investigating the impacts of maternal dietary fat intake on fetal muscle metabolism and offspring metabolic risk.

3:45-4:25 Kaustav Majumder (Univ of Nebraska)

Presented work on the impacts of specific dietary peptides present in cheese and beans on vascular health and resistance to inflammation linked to cardiovascular disease. Discussed actions taken to address comments and questions from 2020 meeting, and discussed possibility of looking at effects on lesion development in atherosclerosis model (may require several weeks on atherogenic diet), as well as vascular endothelial function (Ach response curves SMC contraction).

6:00 pm Group dinner at Hotel

**Friday October 15, 2021:**

9:00 am Business meeting at hotel. Discussed plans for 2022 meeting in Hawaii hosted by Dr, Pratibha Nerurkar, and 2022 Chair Adam Chicco (Colorado), who will also lead W5122 renewal effort.