Paper P6-5	Capstone Presentation Jean H. Hankin, Cancer Research Institute of Hawaii University of Hawaii

TWENTY-FIRST NATIONAL NUTRIENT DATABANK CONFERENCE CAPSTONE PRESENTATION

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ABSTRACT

As one of the leading authorities on the development of ethnic databases, Dr. Hankin will summarize the two and a half-day discussions and present a new challenge for the year. Dr. Hankin has been a presenter at previous conferences, but never the capstone presenter. Her challenge is to deliver the final message to the attendees and based on her previous presentations at this conference, she is the perfect choice. Her wit, wisdom, and personal presentation style will surely motivate the attendees to new adventures and will set the foundation for the 1997 National Nutrient Databank Conference program.

In summary, Dr. Hankin compiled the most important points gleaned from the papers presented and they have been transcribed as follows:

Regarding new strategies and directions for food databases, Rhona Applebaum stressed that we need a uniform federal policy that includes non-nutrient data. There are 2 types of databases, commodity and recipe which need a flexible structure that involves industry participation. We need unified labeling which may involve label reformulation or new items. There is need for a central repository for collecting, organizing and distributing data. Finally, one key point is that there is a need for more funding for food composition research.

Dr. Christopher Beecher spoke on NUTRALERT: a database for non-nutrient components in plants. This is a premier natural products database containing 120,000 books and articles, 43,000 plants and animal species, and 103,000 chemical compounds. There are 3 databases: active plants, active compounds, and plants with active compounds. Essentially this is a database from the literature with very little data on analyses. He stressed the importance of flavonoids, isoflavonoids, saponins, and carotenoids. Additionally, he stressed the need for funding for developing analytical methods and for performing needed analyses of foods.
In food design: trends and changes, Dr. Samuel Godber discussed the development of new products, which is essential for companies, but a costly and lengthy process. In 1995, 17,000 new products were developed, of which only 15% were successful. New products developed included baked products, beverages and side dishes with the focus on taste, designer foods, and health claims. Top trends in marketing include “fresh is best, energy enhancing foods, a eat where you are society, upgrading the American palate—e.g., Cajun foods, save planet earth, fitness and nutrition.

Dr. Martina McGloughlin spoke on new products in the food and agricultural biotechnology pipeline. Part of her message is that biotechnology is not new!!!! Prehistoric farmers improved plant lines and animal breeding through altering their genomes. We use microorganisms in the production of bread, beer, wine and cheese. Currently genetic engineering is conducted through application of recombinant DNA methods, as examples: tomatoes with improved ripening and shelf life, squash resistant against viruses, herbicide-tolerant crops, insect-resistant potatoes. Genetic engineering is complex and it takes precision to manipulate living things---it may now be

predictable, precise and controlled. Thus, this will contribute to safer, more nutritional and economic food supply

Regarding analytical methods to obtain high quality laboratory data, Carol Davis stressed that methods be validated before they are applied and urged the importance of accuracy, precision and reproducibility.

Dr. Gary Beecher, in his presentation on measurement of new health-related food components, indicated that the traditional nutrients were important, but don't account for all epidemiological observations. There are additional components with biological activity. New components associated with health include carotenoids, isoflavones, lignins, isothiocyanates, allium, and saponins. There is now additional need for analytical methods and databases for these.

Karen Andrews' paper on dietary fiber in the national nutrient database included the definition of fiber as plant polysaccharides and lignin which are resistant to hydrolysis by human digestive enzymes. The goal of the Nutrient Data Laboratory was presented in two phases: Phase 1: individual carbohydrate components of 50 foods: sugars, total, soluble and insoluble fiber and Phase 2: 500 priority foods -- contribute 80% of key fiber components of public health significance

The update panel including presentations by government agencies is traditionally a highlight of the National Nutrient Databank Conference. This is a once a year opportunity to assemble those individuals who produce and/or use the nutrient data generated nationally to inform the users of the status of work being conducted in their departments.

- Joanne Holden of the Nutrient Data Laboratory mentioned that USDA Standard Reference Database, Release 11, would appear with a new structure. The primary dataset for 1995 CSFII contained 2500 foods and 30 components for use with the USDA recipe file. The National Nutrient Database for Child Nutrition Programs (Release 2) occurred in Fall 1995. And finally that there will be a database redesign in 1997.
- Jean Pennington presented an update of the FDA Total Diet Study indicating that the last analysis for 260 foods analyzed for pesticides, residues, industrial chemicals, radionuclides, toxic minerals and 2 vitamins published in 1991 was ongoing. A revised list of 305 foods will be implemented within next year.
- FDA labeling issues was presented by Tom O'Brien. FDA is planning to publish a proposal to amend the serving size rule; to complete the 1995 Food Label and Package Survey; to publish final rules for voluntary labeling of 60 raw fruits, vegetables, and fish; and has approved 44 databases for labeling.
- Gary Beecher of the Food Composition laboratory indicated that analytical methods were being developed for isoflavonoids, dietary fiber, folates, vitamin E, niacin, and carotenoids. There is a push for improvement of data quality and reducing costs of analysis.
- INFOODS update was presented by Barbara Burlingame who focused on the mission as one of an international network of food data systems. Its aims are to bring together, evaluate and document all available food composition data--national, regional and international levels. There are currently in existence 8 regional data centers and 3 in organizational stages. Workshops are designed to assist regions in maintaining national identity. INFOODS participates in developing standards to increase a country's authority and recognition.

Friday's program began with reports from National Surveys. Alanna Moshfegh described changes in food intakes -- 1977-1994. Grain mixtures were up 40%, in milk consumption there was an increase in low fat and skim milks, meat consumption saw a rise in mixtures of meats with other foods, consumption of eggs decreased by 37%, an increase in 3% for vegetables and 20% for fruits was also noted, as well as an astounding more than 100% rise in non-citrus juices for adults and an increase of >304% in children. Total fat calories were 33% (40% in 1978) but only 1/3 of males and females were consuming <30% fat calories. The survey also indicated that 50% of individuals ate away from home at least once a day and that 30% of males and 45% of females rarely or never do vigorous exercise!!!!

The NHANES III 1996 update was presented by Bethene Ervin who indicated that current research is devoted to underreporting, use of multiple 24-hour recalls, and comparison of in-person with telephone recalls. Interim files for phase I were released in September 1995, with complete NHANES III data files and survey manuals released in 1996. Planning for NHANES IV includes pilot testing 1996-1998, initiation in mid-1998. The sample size planned is 40,000 > 6 MONTHS OF AGE. Included are a 3-hour mobile exam and a one hour home interview. Twenty-four hour recalls will be conducted with 10% selected for a second recall. NHANES IV will include determination of heights, weights, skinfold measurements, as well as nutritional biochemical and hematologic tests. Vitamin and mineral supplement use will be determined by interview. A physical exam will be included with the manual for this having been developed by Kuczmarski.

Danielle Brule discussed the Canadian Food Consumption Surveys. In 1995 the Canadian Heart Health Initiative was begun as a partnership model with the provinces. A coalition of federal, provincial health representatives formed the partnership to obtain nutritional data at national and provincial levels. They developed protocol and diet assessment instruments - sociodemographic data, physical activity, knowledge and attitudes data. The survey was begun with adults and later included 6 to 17 year olds.

Plenary Session 4 concerned food supplements. NHANES III obtained data on prevalence of use and assessed contribution of supplements to total nutrient intakes and nutritional status. Types of supplements being used included: single, multiple vitamins, multivitamin-minerals; formula diets, sports drinks; herbs, plants, etc.; and amino acids, lipotropics and fish oils. This session also described what was termed a “certainty index.” This index includes: 1) matches for specific brand name products; 2) products in which the name is partially complete or misspelled; 3) nutrients known but not amounts; 4) only general product class identified; 5) unidentified, but believed to be a supplement; and 6) unidentified -- unknown product. There was some discussion on construction of a dietary supplement database with efforts provided by FDA, NCHS, USDA to collect dietary supplement data. It was noted that the Continuing Survey of Food Intakes by Individuals asks five questions regarding supplement use: how often supplements are taken; type taken; single supplements used; use of fish oil supplements; and use of fiber supplements. In 1994, 40% of those in the survey took multivitamins, 25 % used a multivitamin/mineral combination, 64% took vitamin C, 40% took vitamin E and 30% took a calcium supplement.

The papers presented this year are indicative of the expansive area nutrient databases and their use in national surveys are expected to cover. We heard everything from non-nutrients to supplements and focused on the broad spectrum of national data to the narrow area of Cajuns in Louisiana. Certainly we have seen that there has always been an adventure of some sort for nutrient database use. Moreover, it appears that nutrient databases, surveys utilizing nutrient databases, and developers of those nutrient databases will be faced with new challenges as new adventures ahead are sure to open up avenues not before seen.