PROGRAM UPDATE 5/1/03

Weds. May 14th

12-2 PM    REGISTRATION

Session 1 – The Chemical and Biological World of Isoprenoids

2:00 PM    OPENING SESSION AND WELCOME

2:15    Symposium chair – Rod Croteau, Washington State University, Pullman, WA

2:30    Invited presentation - Jan Zeevaart, Michigan State University, East Lansing, MI – Regulation of gibberellin biosynthesis and stem growth in rosette plants by photoperiod

3:00    Invited presentation - David Cane, Brown University, Providence, RI - Terpene synthases: the importance of being positive

3:30    Invited presentation – J.C. Jang, Ohio State University, Columbus, OH - The regulatory role of sterols in plant development and gene expression

4:00    COFFEE BREAK

4:30    Selected speaker – Edward M. Davis, Washington State University, Pullman, WA - Biosynthesis of menthol in peppermint

4:50    Selected speaker – Andréa Hemmerlin, Inst. Biol. Moléculaire des Plantes, Strasbourg, France - Interactions between the cytoplasmic mevalonate and the plastidial methylerthritol phosphate pathways in tobacco BY-2 cells

5:10    Selected speaker – Robert C. Schuurink, University of Amsterdam, NL - Volatile terpenoids production by spider mite-infested tomato plants

5:30    Selected speaker – Charles Waechter, University of Kentucky, Lexington, KY – An alternate mechanism for the biosynthesis of farnesyl pyrophosphate and geranylgeranyl pyrophosphate from free farnesol and geranylgeraniol in mammalian and plant cells

6:00    Special welcome – Scott Smith, Dean, UK College of Agriculture
6:30  Welcome reception – E.S. Good Barn – hosted by UK College of Agriculture

8:00  POSTER SESSION

Thurs. May 15th

7:30 AM  POSTERS OPEN – Coffee and light breakfast foods provided

Session 2- Novel Systems and New Insights

Session Chair:  Thomas Bach, Université Louis Pasteur, Strasbourg, France

8:30  Invited presentation – Dring Crowell, Indiana Univ.-Purdue Univ –Indiana, IN - Protein prenylation and methylation in plants

9:00  Invited presentation – Bilal Camara, CNRS, University of Strasbourg, France - Oxidative remodeling of chromoplast carotenoids

9:30  Invited presentation – Seiichi Matsuda, Rice University, Houston, TX - Tinkering with terpenoids biosynthesis

10:00  COFFEE AND POSTER BREAK

10:30  Selected speaker – Arnaud Galichet, Plant Biotechnology, Swiss Federal Institute of Technology, Zurich, Switzerland - Protein prenylation in plants: conserved mechanism but different function?

10:50  Selected speaker – Michael H. Walter, Leibniz-Institute of Plant Biochemistry, Halle, Germany - Diversification of 1-deoxy-D-xylulose 5-phosphate synthase (DXS) genes: Dedicated roles in primary and secondary metabolism

11:10  Selected speaker – Jörg Bohlmann, University of British Columbia, Vancouver, Canada - Terpenoids in conifers: Molecular and genomic dissection of induced defenses in gymnosperms

11:30  Selected speaker – Noriaki Kawano, University of Tokyo, Japan - Biosynthetic studies on steroidal glycosides: Molecular cloning of steroidogenic genes from Costus speciosus and functional expression in Saccharomyces yeast

11:50  Selected speaker – Shigeru Okada, University of Tokyo, Japan - Biosynthesis of triterpenoid hydrocarbons in the green microalga Botryococcus braunii via the non-mevalonate pathway

12:10  LUNCH AND POSTER BREAK

Session 3 – Biochemical and Molecular Dissection of Isoprenoid Biosynthesis
Session Chair: Haruo Seto, Tokyo University of Agriculture, Japan

2:00 PM Invited presentation – Stéphane Richard, Salk Institute, La Jolla, CA - Structural and functional insights into the MEP pathway for isoprenoid biosynthesis

2:30 Invited presentation – Michel Rohmer, Université Louis Pasteur/CNRS, Strasbourg, France - The methyldihydroxyacetone phosphate pathway for isoprenoid biosynthesis in bacteria and plants: characterization of the last two steps catalyzed by the GcpE and LytB proteins

3:00 Invited presentation – Philip J. Proteau, Oregon State University, Corvallis, OR - Biosynthesis of phytol in Euglena gracilis: An alternative to the mevalonate and meytherythritol phosphate pathways.

3:30 COFFEE AND POSTER BREAK

4:00 Invited presentation – Tohru Dairi, Toyama Perfectural University, Toyama, Japan - Functional analysis of eubacterial diterpene cyclases responsible for biosynthesis of a diterpene antibiotic-terpentecin

4:30 Selected speaker – Kevin Walker, Washington State University, Pullman, WA - Taxol: acquisition, functional expression and characterization of the acyl/aroyl transferases in Taxol biosynthesis

4:50 Selected speaker – Joerg Degenhardt, MPI for Chemical Ecology, Jena, Germany - Stereoselectivity and allelic diversity of two maize terpene synthases are dependent on single amino acid substitutions.

5:10 Selected speaker – Natalia Dudareva, Purdue University, West Layfayette, IN - (E)-B-ocimene and myrcene synthase genes of floral scent biosynthesis in snapdragon: function and expression of three terpene synthase genes of a new TPS-subfamily

5:30 Selected speaker – Reuben J. Peters, Iowa State University, Ames, IA - Initiating mechanistic studies of the multifunctional cytochrome P450 kaurenoid oxidases

5:50 Selected speaker – Peter E. Brodelius, Kalmar University, Kalmar, Sweden - Expression, purification and characterization of amorpha-4,11-diene synthase from Artemisia annua L.

7:00 BANQUET DINNER

Fri. May 16th

7:30 AM POSTERS OPEN – Coffee and light breakfast foods provided

Session 4 – Nutritional and Industrial Applications of Isoprenoids

Session Chair: Mylavarapu Venkatramesh (Ramesh), Renessen Company, St. Louis, MO
8:30 Invited presentation – Dean Della Penna, Michigan State University, East Lansing, MI - Progress in understanding vitamin E synthesis in plants

9:00 Invited presentation - Katrina Cornish, USDA/ARS, Albany, CA - Natural rubber biosynthesis and development of guayule as a commercially-viable crop

9:30 Invited presentation – Kenneth Gruys, Monsanto Company, St. Louis, MO - Adventures in metabolic engineering of complex metabolic pathways in plants

10:00 COFFEE AND POSTER BREAK

11:00 Selected speaker – David Shintani, University of Nevada, Reno, NV - A reverse genetic approach to functionally identify plant rubber biosynthetic genes

11:20 Selected speaker – Henry E. Valentin, Monsanto Company, St. Louis, MO - Engineering plants and photosynthetic bacteria for high tocopherol and high vitamin E

11:40 Selected speaker – K. Kinkead Reiling, University of California, Berkeley, CA - Mono and diterpene production in Escherichia coli: Construction of flux-improved geranyl and geranylgeranyl diphosphate biosynthetic pathways

12:00 LUNCH BREAK

1:00 PM Selected speaker – Hiroyuki Kasahara, RIKEN, Japan - Roles of the methylerythritol phosphate and mevalonate pathways in the biosyntheses of plant hormones

1:20 Selected speaker – Cinzia Bertea, University of Turin, Torino, Italy - Identification of intermediates, enzymes and corresponding genes involved in the early steps of artemisinin biosynthesis using Artemisia annua glandular trichomes.

1:40 Selected speaker – George J. Wagner, University of Kentucky, Lexington, KY - Characterization and manipulation of diterpene biosynthesis in tobacco trichome glands

2:00 COFFEE AND POSTER BREAK

Session 5 – Advances with New Technologies

Session Chair: Bob Coates, University of Illinois, Urbana, IL

3:00 Invited presentation – Jonathan Gershenzon, Max Planck Institute for Chemical Ecology, Jena, Germany - The exploitation of model systems to investigate the function and evolution of terpene secondary metabolites in plants

3:30 Invited presentation – Harro Bouwmeester, Plant Research International, Wageningen, The Netherlands - The use of cDNA microarrays and transgenic plants to study terpenoids biosynthesis
4:00 Invited presentation - Jay Keasling, University of California, Berkely, CA - Production of flavor and fragrance terpenes in *Escherichia coli*

4:30 CONFERENCE CLOSURE

**Sat. May 17th**

Excursion - Bluegrass and Bourbon - return to hotels by 3:30 PM