

## EVENT AGENDA

Date	Function	Start	End	Room
Wednesday 8/21/19	Arrival	4:00 pm	-	Village Hotel
Thursday 8/22/19	Breakfast on own	6:30 am	7:45 am	Village Social
	CEP Course: Basic Skin Science	8:00 am	5:00 pm	Amherst B
	Lunch Provided	12:00 pm	1:30 pm	Amherst B
	Wine Tasting	6:00 pm	8:00 pm	Biltmore Winery
Friday 8/23/19	Breakfast on own	6:30 am	7:45 am	Village Social
	Check out	-	11:00am	Village Hotel
	CEP Course: Advanced Skin Science	8:00 am	5:00 pm	Amherst B
	Lunch Provided	12:00 pm	1:30 pm	Amherst B

### Basic Skin Science 2019

R. Randall Wickett, Ph.D. and K.P. Ananth  
James L. Winkle College of Pharmacy  
University of Cincinnati

Overview: This course is designed to provide a basic introduction to the structure and function of skin, skin measurement methods and some basic effects of skin care products for those new to the skin care field. It will also serve as detailed introduction to prepare students to study more advanced topics in skin care science presented in the Advanced Skin Science course.

Basic Skin Anatomy and Physiology – RRW

9:00 – 10:30

1. Introduction
  - a. Reflections on 40 years of skin science
  - b. Functions of Human Skin
2. The Dermis – and skin appendages
  - a. The papillary and reticular dermis
  - b. Hair follicles, sweat glands and finger nails
3. The epidermis- Basics
  - a. The dermal epidermal junction
  - b. Keratinocytes – the workhorse cell of the integument
  - c. Keratins – Key structural proteins of the skin (and hair and nail)

- d. The stratum granulosum and formation of the stratum corneum
- 4. The Stratum Corneum (SC) Barrier-Basic Structure- Bricks and Mortar
  - a. SC Barrier Lipids – The mortar
  - b. The Corneocyte Bricks
  - c. Skin penetration pathways and alleged pathways - basics
  - d. Filaggrin and Natural Moisturizing Factors - basics
  - e. Corneodesmosomes, digestion and desquamation

The Science and technology of Skin Cleansing – KPA

10:45 – 12:15

1. Short intro to skin cleansing technology evolution
2. Surfactants and their interactions with skin proteins and lipids
3. Skin mildness – understanding skin irritation and dryness
4. Importance of skin sensory in cleansing
5. Advanced care from cleansers – moisturisation and beyond
6. Technologies for compromised skin conditions – infant skin, ageing skin, sensitive skin

Non-invasive testing of skin function: Basic Methods – RRW

1:00 – 2:30

1. Transepidermal water loss and skin barrier function
2. Electrical measurements and skin hydration
3. Mechanical properties – the Cutometer
4. Skin Color measurements-meters and photographic techniques
5. 3 D Texture Analysis
6. Biomarker analysis – the wave of the future?
  - a. Markers of barrier function
  - b. Markers of inflammation
7. Gender and ethnic differences in biophysical properties
  - a. Gender differences – are they real
  - b. Ethnic differences in skin properties
    - i. Differences in baseline properties
    - ii. Is response to irritant different among ethnic group?
    - iii. Is it ethnic origin or only skin pigment type that matters

Skin Moisturisation technologies - KPA

3:00 – 4:30

1. Factors leading to dry skin
2. Outside-in approach –
3. Occlusives,
4. humectants,
5. lipid technologies
6. Inside-out approaches

7. Lipid-precursor technologies
8. Activating skin to make better barrier – PPARs
9. Assessing barrier quality
  - a. TEWL tape strip methodologies
  - b. In-vivo spectroscopic methods - ATR/IR

### Advanced Skin Science 2019

R. Randall Wickett, and KP Ananth  
James L. Winkle College of Pharmacy

Overview: This Advanced Skin Science course will cover topics in skin biochemistry, biophysics and molecular biology. It is assumed that the student will already have basic knowledge of biochemistry and skin structure, function and physiology. It is designed to bring the Skin Care Scientist up to date on topic. The goal of the course is to bring the student up to date on skin research of importance to the cosmetic industry.

#### Advanced Topics on the Epidermis and Stratum Corneum – RRW 9:00-10:30

1. The Epidermis,
  - a. The dermal epidermal junction,
  - b. Stem cells and cell renewal in the epidermis, how does it work?
  - c. Epidermal Keratins structural details and disorders
  - d. Desmosomes in the epidermis,
  - e. Tight Junctions in the epidermis,
2. The Stratum Corneum (SC) Barrier:
  - a. Keratins and filament formation,
  - b. Structure and formation of the cornified cell envelope,
  - c. Filaggrin hydrolysis and natural moisturizing factors,
  - d. SC pro barrier and lipids,
  - e. SC desmosomes and the complex proteolytic cascade in the SC
  - f. Barrier repair and homeostasis
  - g. The antimicrobial barrier of the Stratum Corneum

#### Recent Advances in our understanding of skin lipids – KPA 10:45-12:15

1. Sebaceous lipids – positives and negatives
2. Sebaceous lipids vs stratum corneum integral lipids
3. Recent advances in our understanding SC lipid ultra-structure
4. In-vivo ATR methodology for probing SC lipid structure
5. Review of technologies for maintaining SC lipids

#### Skin Pigmentation – RRW 1:00 0 2:00

1. Melanocytes and melanin disorders,
2. Melanosome synthesis and translocation,
3. Constitutive and facultative pigmentation,

#### 4. Genetic and other Factors Determining Skin Color

Skin pH and its role maintaining superior SC barrier – KPA 2:00-3:00

- a. Acid-mantle and its origin
- b. Is skin pH an indicator of skin health?
- c. Factors that can affect skin's natural pH
- d. Skin pH vs product pH – relevance to skin care
- e. Skin pH vs product pH – relevance to skin cleansing

Skin Aging and Photo-Aging – RRW 3:15 – 4:30

5. Aging of the Epidermis and Stratum Corneum
6. The dermal matrix and Intrinsic aging
7. Acute effects of sun on skin,
8. Reactive oxygen species
9. The MAP Kinase pathway and MMPs
10. Photoaging in histology
11. Photoaging in Appearance