Association of Medical & Graduate Departments of Biochemistry
And the Association of Biochemistry Course Directors
Presents the Second

Medical Biochemistry Education Strategies Workshop

Ocean Creek Resort, Myrtle Beach, SC

April 25-29, 2009

Meeting Objectives:

To develop objectives for Medical Biochemistry courses or components of courses

To learn how to effectively utilize interactive teaching methods

To apply adult learning principles to biochemistry teaching

To provide continuing education in recent or controversial areas of medical biochemistry

Poster Session:

Poster sessions will be an important part of this Workshop

Poster abstracts are encouraged and will be available in the Proceedings of the Workshop. Details for submitting Poster abstracts will be posted on the AMGDB website (AMGDB.org)

Please Check Our Website for Full Agenda and Workshop Updates
www.amgdb.org/ABCD/index.shtml

Workshop Schedule:

The Workshop will start Saturday, April 25 at 5:00pm
Registration desk will open at 3:00pm
The Workshop will end on Wednesday, April 29 at 10:30am

Workshop Location

Ocean Creek Resort
10600 North Kings Highway
Myrtle Beach, SC 29598
Tel: 843-272-7724
www.oceancreek.com

Medical Biochemistry Education Strategies Workshop

April 25 – April 29, 2009
Ocean Creek Resort
Myrtle Beach, SC

Sponsored by
the Association of Biochemistry Course Directors (ABCD) and
the Association of Medical & Graduate Departments of Biochemistry (AMGDB)

Organizing Committee:

Janet E. Lindsley, Chair ABCD, University of Utah School of Medicine
Denise Ferrier, Vice-Chair ABCD, Drexel University College of Medicine
Emmanuel Atta-Asafo-Adjei, Meharry Medical College
Sanjay Bidichandani, ABCD Financial Coordinator, University of Oklahoma HSC
Stephen Chaney, ABCD Website Coordinator, University of North Carolina
Michael Lea, UMDNJ – New Jersey Medical School
Michael Lieberman, University of Cincinnati
Peter Ronner, Thomas Jefferson University

Agenda

Saturday, April 25

3:00 - 8:00 pm	**Registration Desk Open** Staff: **Sheilah Jewart**	Creekside Foyer
5:30 - 7:00 pm	**Welcome Reception**	Creekside Patio
7:00 - 10:00 pm	**Welcome Dinner**	Creekside Room

Opening Session:

Welcome & Overview: **Janet Lindsley**, Ph.D., University of Utah School of Medicine, Salt Lake City, and Chair of the Association of Biochemistry Course Directors

Defining Course Content in Biochemistry for Medical Students: **Peter Ronner**, Ph.D., Thomas Jefferson University, Philadelphia

Sunday, April 26

6:30 - 7:45 am **Buffet Breakfast** Creekside Room

8:00 - 12:30 pm **General Session I: Strategies for Teaching and Learning**
Water Oaks
Moderator: **Denise Ferrier**, Ph.D., Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia

8:00 - 8:45 am **Use of Team-Based Learning in Teaching Medical Biochemistry** - **Edward E. McKee**, Ph.D., Department of Biochemistry and Molecular Biology, Indiana University School of Medicine, South Bend

8:45 - 9:30 am **Educational Uses of Audience Response Systems** – **Stephen Chaney**, Ph.D.**,** Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill

9:30 - 9:45 am **Break**

9:45 - 10:30 am **Concept Mapping** - **Mary Wimmer**, Ph.D., and **Andrew K. Shiemke**, Ph.D., Department of Biochemistry, West Virginia University School of Medicine

10:30 - 12:30 pm **Defining Course Content, Session I**
(4 working groups; groups receive preliminary topic lists)

DNA Replication, Transcription, and Translation
Water Oaks 1
Moderator: **Michael Lieberman**, Ph.D., University of Cincinnati, Cincinnati
(Topics: structure of DNA, DNA hybridization DNA mutation, DNA repair, DNA replication, DNA-based lab techniques such as PCR, transcription, steroid receptors, nuclear hormone receptors, RNA processing, translation, protein quality control, protein processing and targeting)

Fundamentals, Proteins, and Enzymes
Water Oaks 2
Moderator: **Peter Ronner**, Ph.D., Thomas Jefferson University, Philadelphia

(Topics: ΔG, Keq, pI, pK, amino acids, secondary structure elements, folding, domains, motifs, posttranslational modification of proteins, extracellular matrix proteins, collagen, membrane structure, membrane proteins, Michaelis-Menten equation, allostery, enzyme inhibitors, enzyme-linked immunoassay, Western blot)

Blood Water Oaks 3

Moderator: **Denise Ferrier**, Ph.D., Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia
(Topics: heme metabolism, bilirubin lab values, iron homeostasis, hemoglobin, hemoglobinopathies, hemoglobin electrophoresis, clotting)

Carbohydrate Metabolism Library

Moderator: **Michael Lea**, Ph.D., UMDNJ - New Jersey Medical School
(Topics: structure of carbohydrates, carbohydrate uptake, glycolysis, pyruvate kinase deficiency, pentose phosphate pathway, glucose 6-phosphate dehydrogenase deficiency, fructose and galactose metabolism, glycogen metabolism, glycogen storage diseases, gluconeogenesis, pyruvate dehydrogenase, citric acid cycle, oxidative phosphorylation)

12:30 - 1:30 pm **Luncheon** Water Oaks Patio

Afternoon Free

4:00 - 5:30 pm **Poster Presentations** Water Oaks

5:30 - 6:45 pm **Dinner** Creekside Room

7:00 - 8:30 pm **Workshop Sessions**

Workshop 1 Water Oaks 1
Use of Concept Mapping - **Mary Wimmer**, Ph.D., and **Andrew K. Shiemke**, Ph.D., Department of Biochemistry, West Virginia University School of Medicine

Workshop 2 Water Oaks 2
Resource Exchange Session – **Denise Ferrier**, Ph.D., Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia

Workshop 3 Water Oaks 3
Ideas for Being a Highly Effective Course Director - **Stephen Chaney**, Ph.D.**,** Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill

Workshop 4 Library
Sharing and Evaluating Multiple-Choice Questions – **Janet Lindsley**, Ph.D., University of Utah School of Medicine, Salt Lake City

Monday, April 27

6:30 - 7:45 am	**Buffet Breakfast**	Creekside Room
8:00 - 12:00 noon	**General Session II: Adult Learning and Assessment** Moderator: **Michael Lea**, Ph.D., UMDNJ - New Jersey Medical School	Water Oaks
8:00 - 9:00 am	**Applying Adult Learning Principles to Basic Science Education** - **Nicole Woods**, Ph.D., Wilson Centre for Research in Education and Department of Surgery, University of Toronto Faculty of Medicine	
9:00 - 10:00 am	**Contextual Learning: Developing, Finding and Using Clinical Cases** - **Peter Rubenstein**, Ph.D., University of Iowa, College of Medicine	
10:00 - 10:20 am	**Break**	
10:20 - 11:00 am	**Assessment of learning: What I Learned from Writing Questions for NBME** - **Janet Lindsley**, Ph.D., University of Utah School of Medicine, Salt Lake City	
11:00 - 11:20 am	**The Use of Team Exams to Enhance Student Learning - Dennis Kiick**, Ph.D., Lincoln Memorial University, DeBusk College of Osteopathic Medicine, Harrogate	
11:20 - 12:00 noon	**On-line Resources for Problem-Based Learning: A Virtual Guide to Learning for Medical Students** - **Eric Niederhoffer**, Ph.D., Southern Illinois University School of Medicine, Carbondale	
12:00 - 1:00 pm	**Luncheon**	Water Oaks Patio

1:00 - 1:30 pm **Design, Content, and Utilization of a Web-Based Biochemistry Learning Module - Michael King**, Ph.D., Indiana University, School of Medicine, Terre Haute

1:30 – 3:00 pm **General Session III: Continuing Education in Medical Biochemistry: Controversial Topics** Water Oaks

Moderator: **Emmanuel Atta-Asafo-Adjei**, Ph.D., Meharry Medical College, School of Medicine, Nashville

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Topics:

Why does a purine nucleoside phosphorylase deficiency lead to a partial immune defect, yet an adenosine deaminase deficiency leads to a full immune defect?- **Emmanuel Atta-Asafo-Adjei**, Ph.D., Meharry Medical College, School of Medicine, Nashville

What are the relative contributions of hypercholesterolemia and inflammation to atherosclerosis? Is C-reactive protein a good measure of the inflammation that is associated with atherosclerosis?- **James Shoemaker**, M.D., Ph.D., Saint Louis University, School of Medicine, St Louis

What is the cause of hepatic encephalopathy - ammonia alone or with other factors?- **Peter Rubenstein**, Ph.D., University of Iowa, College of Medicine, Iowa City

What are the most likely biochemical mechanisms of insulin resistance?- **Alan Diekman**, Ph.D., University of Arkansas for Medical Sciences, College of Medicine, Little Rock

How does thyroid hormone increase the metabolic rate?- **Selina Noramly**, Ph.D., University of Virginia, School of Medicine, Charlottesville

Transcription without a TATA Box?- **Jane Clifford,** Ph.D., Drexel University College of Medicine, Philadelphia

3:00 - 3:30 pm **Break**

3:30 - 5:00 pm **Workshop Sessions:**

<u>Workshop 1</u>

Water Oaks 1

Use of Concept Mapping - **Mary Wimmer**, Ph.D., and **Andrew K. Shiemke**, Ph.D., Department of Biochemistry, West Virginia University School of Medicine

Workshop 2 Water Oaks 2

Resource Exchange Session – **Denise Ferrier**, Ph.D., Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia

Workshop 3

Water Oaks 3

Ideas for Being a Highly Effective Course Director - **Stephen Chaney**, Ph.D.**,** Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill

Workshop 4 Library

Sharing and Evaluating Multiple-Choice Questions – **Janet Lindsley**, Ph.D., University of Utah School of Medicine, Salt Lake City

Evening on Own

Tuesday, April 28

6:30 - 7:45 am **Buffet Breakfast** Creekside Room

8:00 - 8:30 am **Business & Organizational Meeting I** Water Oaks
Election of officers (applications due Monday evening)

8:30 - 9:50 **General Session IV - Part 1: Medical Licensure & Accreditation** Water Oaks
Moderator: Michael Lieberman, Ph.D., University of Cincinnati, Cincinnati

8:30 - 9:00 am **USMLE Redesign: Fact, Fallacy, and the Future - Peter Katsufrakis**, M.D., M.B.A., Associate Vice President for Post-Graduate and Developmental Programs, National Board of Medical Examiners, Philadelphia

9:00 – 9:10 am Discussion

9:10 - 9:40 am **Update from the LCME: New Standards, New Actions, and the Most Commonly Cited Standards - Daniel Hunt, M.D.**, Secretary and Vice President for Accreditation Services, Liaison Committee on Medical Education

9:40 – 9:50 am Discussion

9:50 - 10:10 am Break

10:10 – 12:00 noon **General Session IV - Part 2: Biochemistry in Integrated Curricula – How Do They Fit Together?**
Moderators: **Stephen G Chaney, PhD,** University of North Carolina and **Sanjay Bidichandani**, M.B.B.S., Ph.D., University of Oklahoma HSC

Discipline-Based Integration Models:

10:10 – 10:20 am "**Biochemistry in an Integrated Block System - The UNC Experience" - Stephen Chaney**, Ph.D., Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill

10:20-10:30 am **"Molecular Foundations of Medicine: Development of an Interdisciplinary Biochemistry-Based Course" - Neil Osheroff**, PhD., Department of Biochemistry, Vanderbilt University School of Medicine, Nashville TN

	10:30 – 10:40 am Discussion-Other Discipline-Based Models
	Organ System-Based Integration Models
10:40 – 10:50 am	**"Organ-Systems-Based Integration of Biochemistry; The Best and Worst Of Times" – Eric Neiderhoffer**, Ph.D., Department of Biochemistry and Molecular Biology, Southern Illinois University School of Medicine, Carbondale IL
	Medical Condition-Based Integration Models
10:50-11:00 am	**"Northern Lytes" – Andrew Don-Wauchope**, MD., Department of Pathology and Molecular Medicine, McMaster University Medical Center
11:00 – 11:10	Discussion – Other Organ System- & Medical Condition-Based Models
	Other Integration Models
11:10 - 11:20 am	**"Early Attempts at Integrating Biochemistry into a Clinically Oriented Curriculum" - Sanjay Bidichandani**, M.B.B.S., Ph.D., University of Oklahoma HSC, Oklahoma City OK
11:20-11:30 am	**"Six Steps to Curriculum Integration" – Chin-To Fong**, MD., School of Medicine and Dentistry, University of Rochester
11:30 - 12:00 noon	Open Discussion: Teaching of Medical Biochemistry in Integrated Curricula
12:00 - 1:00 pm	**Luncheon** Water Oaks Patio

1:00 - 3:00 pm **Defining course content, Session II**
(4 working groups; groups receive preliminary topic lists)

Lipid metabolism Water Oaks 1
Moderator: **Stephen Chaney**, Ph.D.**,** Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill
(Topics: fatty acid synthesis, synthesis of eicosanoids, fatty acid oxidation and associated disorders, synthesis and degradation of sphingolipids, synthesis and oxidation of ketones, triglycerides, synthesis and function of cholesterol, lipid transport via lipoprotein particles, hyperlipidemias and hypolipidemias, synthesis of steroids, congenital adrenal hyperplasias, metabolism of ethanol)

Signaling, hormones, and diabetes Water Oaks 2
Moderator: **Michael Lieberman**, Ph.D., University of Cincinnati, Cincinnati
(Topics: signaling via intracellular receptors, signaling via cell-surface receptors, G-proteins and G-protein-coupled receptors, growth factors and enzyme-linked receptors, insulin, glucagon, cortisol, epinephrine, norepinephrine, thyroid hormones, gonadotropins)

Protein and amino acid metabolism Water Oaks 3
Moderator: **Peter Ronner**, Ph.D., Thomas Jefferson University, Philadelphia
(Topics: digestion of protein, absorption of amino acids and small peptides, whole-body protein synthesis and degradation, transport of amino acids, cystinosis, cystinuria, Hartnup disease (vs. pellagra), metabolism of phenylalanine and tyrosine, metabolism of tryptophan, metabolism of branched-chain amino acids, production of glutamine and alanine, disposal of nitrogen, urea cycle, nitrogen balance, pyridoxal phosphate, tetrahydrobiopterin, newborn screening)

Nucleotide metabolism Library
Moderator: **Janet Lindsley**, Ph.D., University of Utah School of Medicine, Salt Lake City
(Topics: one-carbon metabolism, activated methyl-group pathway, transsulfuration pathway, folate deficiency, cobalamin deficiency, vitamin B_6 deficiency, pyrimidine nucleotides, chemotherapy, purine nucleotides, hyperuricemia, gout, tumor lysis syndrome, Lesch Nyhan syndrome)

3:00 - 3:30 pm	**Break**	
3:30 - 4:15 pm	**Business & Organizational Meeting II** Topics for the next meeting Moderators: as elected in the morning	Water Oaks

Remaining Afternoon Free

7:00 - 10:00 pm	**Farewell Dinner**	Creekside Room

Janet Lindsley, Ph.D., University of Utah School of Medicine, Salt Lake City; Chair, Association of Biochemistry Course Directors
Denise Ferrier, Ph.D., Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia; Vice-Chair, Association of Biochemistry Course Directors

Wednesday, April 29

6:30 - 7:45 am	**Buffet Breakfast**	Creekside Room
8:00 - 9:00 am	**Strategies for Bringing Basic Science Back to the Third and Fourth Years of Medical School.** Moderators: **Stephen Chaney**, Ph.D.**,** Department of Biochemistry and Biophysics, University of North Carolina School of Medicine, Chapel Hill **Michael Lieberman**, Ph.D., University of Cincinnati, Cincinnati	Water Oaks
9:00 - 10:30 am	**Defining Course Content, Session III** (Discuss and finalize objectives) Moderator: **Peter Ronner**, Ph.D., Thomas Jefferson University, Philadelphia	Water Oaks
11:00 am	**Check out / Departures** Sign up to Share Taxis to Airport	

Time	Saturday	Sunday	Monday	Tuesday	Wednesday
6:00 am					
7:00 am		Buffet Breakfast, Creekside Room			
8:00 am		General Session I: Strategies for Teaching and Learning (TBL, audience response, concept mapping) (*Water Oaks*)	General Session II: Adult Learning and Assessment (adult learning, contextual learning, assessment of learning, online resources for PBL) (*Water Oaks*)	ABCD Business Mtg I (Water Oaks)	Basic Science in Years 3 and 4 (*Water Oaks*)
9:00 am				General Session IV: Medical Licensure, Accreditation, Integration and Biochemistry - How Do They Fit Together? (USMLE redesign, LCME update, biochemistry in integrated curricula) (*Water Oaks*)	Defining Course Content III: Consensus (*Water Oaks*)
10:00 am		Defining Course Content I (4 groups; *Water Oaks 1-3, Library*)			
11:00 am					
12:00 pm		Luncheon (*Water Oaks Patio*)	Luncheon (*Water Oaks Patio*)	Luncheon (*Water Oaks Patio*)	
1:00 pm		(Free)	General Session III: Continuing Education in Medical Biochemistry: Controversial Topics (*Water Oaks*)	Defining Course Content II (4 groups; new topics; *Water Oaks 1-3, Library*)	
2:00 pm					
3:00 pm	Registration Desk open (until 8:00 pm; *Creekside Foyer*)		(Break)	(Break)	
4:00 pm		Poster Presentations (*Water Oaks*)	Workshop Sessions (Repeat): Concept mapping, Resource exchange, Effective course directorship, MCQs (*Water Oaks 1-3, Library*)	ABCD Business Mtg II (*Water Oaks*)	
5:00 pm			(Free)	(Free)	
6:00 pm	Welcome Reception (*Creekside Patio*)	Dinner			
7:00 pm	Welcome Dinner and Opening Session (*Creekside Room*)	Workshop Sessions: Concept mapping, Resource exchange, Effective course directorship, MCQs (*Water Oaks 1-3, Library*)		Farewell Dinner (*Creekside Room*)	
8:00 pm					
9:00 pm					