



# Clinical Science Trumpet

Newsletter of the Association  
of Clinical Scientists

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March 2010

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San Antonio

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## Annual Meeting in San Antonio, Texas, on 12 to 16 May 2010

### *Invitation*

The *Association of Clinical Scientists' 130th Meeting* will be held in San Antonio, Texas, from Wednesday afternoon, 12 May, to Sunday morning, 16 May 2010. The headquarters will be the Historic Wyndham St. Anthony Hotel, located in downtown San Antonio, a few steps from the famous River Walk. The meeting will be hosted by the University of Texas Health Science Center—San Antonio (UTHSCSA). Robert L Reddick and Robert L. Hunter, Jr., Co-Chairs of the Program Committee, cordially invite you to attend this outstanding conference on *The Frontiers of Clinical Science*.

### *Schedule*

The meeting registration desk will open and committee meetings will be held at the St. Anthony Hotel on Wednesday afternoon and evening. Scientific sessions will be held at the hotel on Thursday and Saturday. The Friday morning session will be at UTHSCSA, including a tour of the clinical laboratories.

### *Scientific Program*

The program (pages 4 to 6) features seminars on transfusion medicine and atherosclerosis, a surgical pathology tutorial on unusual diseases of the respiratory tract, and workshops on multi-spectral imaging and quantitative real-time PCR. The 58 presentations cover important and innovative developments in pathology, labora-

tory medicine, and clinical practice, including exciting prospects for personalized health care.

### *San Antonio Tour*

On Friday afternoon, participants will enjoy a special bus excursion to historic and cultural attractions, organized by Donna Stein, a medical technologist who is a certified professional guide for San Antonio. The tour will include (a) *Mission San Jose*, the largest and most fully restored Spanish mission in North America, (b) the *Alamo*, and (c) *San Antonio Museum of Art*, with a docent-led visit to the Rockefeller Center for Latin American Art.

### *Annual Reception and Banquet*

The banquet on Friday evening will feature an address by Carl Hacker, a noted authority on Texas history. The program will also include presentation of the Association's annual awards.

### *Musicale and Art Show*

This event on Saturday evening will feature chamber music, art works, handicrafts, and photographs by members and guests. Wine and cheese will be served at the intermission. Since Bernard Gondos will be in France, Myra Wilkerson has agreed to organize the *Musicale and Art Show* this year. If you wish to perform or exhibit, please contact Myra (mwilkerson@geisinger.edu).

## Association of Clinical Scientists

Charles D Hawker  
PhD, President

Dani S Zander MD  
Vice-President

Vincent A DeBari  
PhD, Past-President

Robert L Hunter Jr  
MD, PhD, Director  
of Scientific Sections

F William Sunder-  
man Jr MD,  
Secretary-Treasurer

Frederick  
Muschenheim MD  
Recording Secretary

Other Members of  
the Executive  
Committee:

M Kent Froberg  
MD DVM

Nina Tatevian MD

Myra L Wilkerson  
MD

The Association's  
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458 3351; fax 802  
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clinisci@sover.net;  
website: www.  
clinicalscience.org

### *Athletics*

The *Run-for-the-Lilies*, an annual running event, will be held early on Saturday morning, organized by Filiberto Cavazos, Chair of the Athletics Committee.

### *Accompanying Persons*

Participants are invited to bring along their families to enjoy San Antonio's many attractions and join in a program of congenial activities to be organized by the Association's Auxiliary.

### *Meeting Registration*

The regular registration fee is \$395. Junior members, emeritus members, and non-member residents or post-doctoral fellows may pay a reduced fee (\$295). The registration fee includes one ticket to the reception and banquet. Tickets for the luncheons of scientific sections cost \$30. The musicale and art show is free. The meeting registration form is printed on page 7.

### *Hotel Accommodations*

The St. Anthony Hotel, rated Four Diamonds by AAA, has 352 guest rooms and splendid conference facilities. The special convention rate will be \$169/room (single or double) plus taxes. The famous Peacock Alley Lobby of the St. Anthony Hotel is one of San Antonio's landmarks. The amenities include a roof-top swimming pool, a fitness center, and a business center. The hotel's address is 300 East Travis, San Antonio, and its website is [www.thestanthonyhotel.com](http://www.thestanthonyhotel.com). The number of rooms at the special rate is limited, so make your reservations early by calling the hotel at (210) 227-4392, or 1-800-Wyndham, or by sending a fax to (210) 222-1896. Please specify that you will attend the Association's meeting. **The cut-off date for reservations at the special convention rate is 12 April 2010.**

### *Transportation*

Travel time between the St. Anthony Hotel and San Antonio International Airport is about 15 minutes. Shuttle service costs \$18 one-way and taxi service averages \$25 for 1 to 4 passengers. Guest parking with in/out privileges at the hotel costs \$17/night (self-parking).

### *CME Accreditation.*

This activity was planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing

Medical Education (ACCME) through joint sponsorship of the College of American Pathologists (CAP) and the Association of Clinical Scientists. The College of American Pathologists is accredited by ACCME to provide continuing medical education for physicians.

### *CME Credit Designation*

**The College of American Pathologists designates this educational activity for a maximum of 20.25 AMA PRA Category 1 credits™.** Participants should only claim credit hours commensurate with the extent of their participation in the activity.

### *Continuing Education (CE) for Non-Physicians Designation*

The College of American Pathologists designates this educational activity for a maximum of 20.25 credit hours of continuing education. Participants should only claim credit hours commensurate with the extent of their participation in the activity.

### *California, Florida, and ASCP Statements*

This activity is approved for continuing education credit in California and Florida. Non-physicians from Florida must provide their license numbers. This activity meets the continuing education requirements for the ASCP Board of Registry Certification Maintenance Program.

### *Disclaimer*

The content of this CME activity does not necessarily reflect the view or policies of the College of American Pathologists.

### *Educational Goals*

The overall goals of this meeting are to enable the registrants to:

(a) interpret, discuss, appraise, and apply in the clinical arena recent advances in laboratory techniques for clinical diagnosis and knowledge about clinical science, including clinical chemistry, immunology, microbiology, hematology, transfusion medicine, toxicology, cell and tissue pathology, informatics, molecular biology, and biotechnology;

(b) survey the frontiers of research in clinical science, especially transfusion medicine, hematology, molecular biology, atherosclerosis,

microbiology, surgical pathology, instrumental analysis, and clinical informatics;

(c) analyze the molecular circuitry of cancer cells by examining the expression patterns of specific proteins using immunohistochemical techniques, and use the information to predict the therapeutic responses of individual tumors to modulators of gene expression; and

(d) become acquainted with clinical scientists at the University of Texas Health Science Center–San Antonio and appraise their impact on medical care and clinical science in the USA.

### ***Educational Needs Identified***

Specific educational needs of the target audience include:

(a) methods for safety monitoring and quality assurance in transfusion medicine;

(b) methods for molecular diagnostics and morpho-proteomic profiling of cancers;

(c) recent insights on the pathogenesis of atherosclerosis;

(d) histopathologic diagnosis of unusual and misplaced lesions of the respiratory tract; and

(e) the rapidly evolving role of the clinical laboratory in personalized healthcare, especially in regard to tumor therapy, pharmacogenomics, and metabolic disorders.

In addition, the program addresses the general educational need to survey the frontiers of clinical science in order to introduce salient advances into the clinical practice of pathology and laboratory medicine.

### ***Professional Practice Gaps***

Four professional practice gaps are the primary focus of this program:

(a) disparity between current practices in transfusion medicine and the recent recognition of ways to increase blood donor safety, to improve patient outcomes by minimizing blood unit storage, and to integrate blood coagulation testing into transfusion decisions;

(b) disparity between the state-of-the-art in cancer morphoproteomics and the availability of immunohistochemical profiling of the proteomic patterns of each cancer patient's tumor, in order to guide individual selection of optimal cancer therapy;

(c) disparity between the state-of-the-art of analytical instrumentation (eg, multispectral microscopic imaging, quantitative real-time PCR) and the utilization of these advanced techniques for clinical diagnosis;

(d) disparity between current practices in laboratory medicine and new approaches to individualization of laboratory tests, especially in respect to pharmacogenomics.

### ***General Educational Objectives***

After attendance at this meeting, the participants should be able to:

(a) discuss knowledgeably the specific clinical advances and research findings that were presented;

(b) decide which advances and findings have applications in their daily work as clinical scientists;

(c) adjust their professional activities and research programs to the prevailing currents of clinical science and medical practice; and

(d) fulfill the learning objectives that are specified for each of the activities that they attended.

### ***Evidence-Based Recommendations***

The College of American Pathologists and the Association of Clinical Scientists are dedicated to promoting improvements of quality in healthcare and not a specific proprietary business or commercial interest. Therefore the College of American Pathologists and the Association of Clinical Scientists expect all planners/faculty/authors of these educational activities to make all recommendations and/or planning criteria involving clinical medicine to be based on evidence that is accepted within the profession of medicine as adequate justification for these indications and contraindications in the care of patients.

### ***Methods and Evaluation***

This program uses lectures, case discussions, technical workshops, a surgical pathology tutorial session, and question-and-answer opportunities as primary educational methods. A course evaluation form will provide participants with the opportunity to assess each session and speaker, to identify future educational needs, and to comment on any perceived commercial bias in the presentations.

### ***Policies and Notices***

All faculty, planners, and authors must disclose to the program audience any financial interest or other relationship with the manufacturer(s) of any commercial product(s) that may be discussed in the educational activity or with the manufacturer of a product that is directly competitive with a product discussed in the presentation. Relevant financial relationships are considered to be any financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

The College of American Pathologists (CAP) and the Association of Clinical Scientists (ACS) do not view the existence of these interests as implying bias or decreasing the value of presentations to participants. The CAP and ACS, along with the Accreditation Council for Continuing Medical Education (ACCME), feel that disclosure is important for the participants to form their own judgments about each presentation.

The faculty must also disclose any unlabeled use or investigational use of pharmaceutical or medical device products.

# 130th Meeting of the Association of Clinical Scientists in San Antonio, Texas, on 12 to 16 May 2010

**Headquarters: The Wyndham San Antonio Hotel;**  
**Host: The University of Texas Health Science Center at San Antonio;**  
**CME Sponsor: The College of American Pathologists**

## Wednesday, 12 May 2010

- 2:00 pm Meeting registration desk opens (Peraux Foyer)
- 2:30 pm Education Accreditation Committee meeting (Jefferson Manor Room)
- 3:30 pm Executive Committee meeting (Jefferson Manor Room)
- 5:00 pm Editorial Board meeting (St. Anthony Club)
- 7:45 pm Executive Committee meeting with Past-Presidents, Regional Delegates, and Chairs of Sections and Committees (Jefferson Manor Room)

## Thursday, 13 May 2010

### Session A: Transfusion Medicine

(Peraux Room)

Chairs: Robert L. Hunter & Magali J. Fontaine

- 8:00 am Welcome. Charles D. Hawker, President of the Association; Robert L. Hunter and Robert L. Reddick, Co-chairs of the Program Committee
- 8:05 am [1] Blood centers and their responsibility for donor well-being. Robert F. Reiss, New York, NY
- 8:30 am [2] Current controversy regarding the storage age of red blood cell units and clinical outcomes. Nicholas Bandarenko III, Durham, NC
- 9:00 am [3] Allogenic blood transfusion: why do we care? James R. Stubbs, Rochester, MN
- 9:30 am [4] Algorithmic and consultative integration of transfusion medicine and blood coagulation. Robert E. Brown et al., Houston, TX
- 10:00 am [5] Predicting platelet flow cytometric crossmatch compatibility by HLA antibody median fluorescence intensity. Amanda Wehler et al., Hershey, PA
- 10:15 am Refreshments

### Session B: Hematology

(Peraux Room)

Chairs: Jonathan S. Krauss & Robert F. Reiss

- 10:30 am [6] Acquired von Willebrand disease: laboratory diagnosis and therapy. John Lazarchick, Charleston, SC
- 11:00 am [7] Transfusion-related alloantibodies in sickle cell disease. Jonathan S. Krauss, Augusta, GA

- 11:30 am [8] Utility and limitations of thromboelastography in the management of coagulation disorders. Jun Teruya, Houston, TX
- 11:45 am [9] Activated protein C resistance screening prior to testing for factor V Leiden mutation. Frederick L. Kiechle et al., Hollywood, FL
- noon Luncheon recess

### Luncheon Sponsored by the Section on Hematology & Transfusion Medicine

(Jefferson Manor Room)

Chair: John Lazarchick

- 12:05 pm [10] Case studies in transfusion medicine and therapeutic apheresis. Fouad N. Boctor, Manhasset, NY, and Myra L. Wilkerson, Danville, PA

### Session C: Molecular Biology & Genetics

(Peraux Room)

Chairs: Frederick L. Kiechle & James R. Stubbs

- 1:30 pm [11] Using small pool PCR to detect microsatellite instability in saliva cells. Peter C. Hu, Houston, TX
- 2:00 pm [12] Abnormal hormetic morphogen gradient signaling in the etiology of cancer. Egil Fosslie, Chicago, IL
- 2:30 pm [13] Glycan expression profile in freshly isolated pancreatic islets. Magali J. Fontaine et al., Stanford, CA
- 3:00 pm [14] The pathology and genetics of metachondromatosis. Kyle Kurek et al., Boston, MA
- 3:15 pm Refreshments

### Session D: Oncology & Proteomics

(Peraux Room)

Chairs: M. Kent Froberg & Joseph C Parker, Jr.

- 3:30 pm [15] Integration of array-based karyotyping in the management of oncology patients. Shelly R. Gunn, San Antonio, TX
- 4:00 pm [16] Array-based comparative genomic hybridization in chronic lymphocytic leukemia. P. Alan Lennon, Houston, TX
- 4:30 pm [17] Molecular events of cholangiocarcinogenesis. Consolato M. Sergi, Edmonton, Alberta, Canada
- 5:00 pm [18] Morphoproteomics guides targeted combinatorial therapy for metastatic renal cell carcinoma. Jamie Buryanek et al., Houston, TX

## Thursday, 13 May 2010 (continued)

- 5:15 pm [19] Salinomycin: genomic and antitumoral effects in neuroblastoma. Priya Weerasinghe and Robert E. Brown, Houston, TX
- 5:30 pm [20] Immunochemical detection of epithelial-mesenchymal transition and properties of stem cells in anaplastic thyroid carcinoma. Jing Liu and Robert E. Brown, Houston, TX
- 5:45 pm [21] Impacts of hypoxia inducible factor 1-alpha and hepatitis virus X on the proliferation of hepatocytes. George G. Chen, Hong Kong, China
- 6:00 pm Adjournment

## Friday, 14 May 2010

(Bus leaves Hotel at 7:20 am to the University of Texas Health Sciences Center—San Antonio)

### Session E: Atherosclerosis

Chairs: Joseph A. Knight & Egil Fosslie

- 8:15 am [22] Abraham J. Gitlitz Memorial Lecture: Lipoproteins, infection, homocysteine, and the vulnerable plaque. Kilmer S. McCully, Boston, MA, and Uffe Ravnskov, Lund, Sweden
- 9:15 am [23] Mouse models of atherosclerosis: the apo-E story. Robert L. Reddick, San Antonio, TX
- 9:45 am [24] Thio-oxidative stress, macrophage recruitment, and atherosclerosis. Reto Asmis, San Antonio, TX
- 10:15 am [25] Quantification of plaque volume by micro-CT techniques. Seema Ahuja, San Antonio, TX
- 10:30 am [26] Is cytomegalovirus associated with coronary artery stenosis in younger patients? M Kent Froberg, Virginia, MN
- 10:45 am Refreshments

### Session F: Tour of Clinical Laboratories

- 11:00 am [27] Innovations in Clinical Laboratory Services at the University of Texas Health Science Center—San Antonio. Robert L. Reddick et al., San Antonio, TX
- noon Bus returns to Hotel
- 1:30 pm **Bus Excursion:** A special tour of San Antonio and environs for participants and accompanying persons (Bus will return to the hotel at 6:00 pm)

### Annual Reception and Banquet

(St. Anthony Club & Anacacho Ballroom, 6:45 pm)  
Toastmaster: Charles D. Hawker, President

**Young Clinical Scientist Awards**, presented by Frederick Muschenheim to Consolato M. Sergi and L. Brannon Thomas

**Diploma of Honor**, presented by Robert E. Brown to M. Kent Froberg

**Clinical Scientist of the Year**, presented by Peter Farmer to Joseph A. Knight

**Banquet Address: Life in Texas in 1833**  
Carl Hacker

## Saturday, 15 May 2010

- 6:30 am Run for the Lilies (2 miles) organized by Filiberto Cavazos, Chair, Athletics Committee
- 7:00 am Breakfast Meeting of the Membership and Credentials Committees (Dani S. Zander and Vincent A. DeBari, Chairs) (hotel dining room)

### Session G: Surgical Pathology Tutorial

(Peraux Room)

*(Session G is concurrent with Session J)*

Dani S. Zander & Nina Tatevian, Chairs

- 8:00 am [28] Tutorial on unusual and misplaced lesions of the upper and lower respiratory tract. Jaishree Jagirdar, with presentations by Steven Held, Kenneth Holder, William McClain, and Taylor Hartley, San Antonio, TX
- 10:00 am Refreshments

### Session H: Cell & Tissue Pathology

(Peraux Room)

*(Session H is concurrent with Session K)*

Peter Farmer & Juliana Szakacs, Chairs

- 10:15 am [29] Non-melanoma skin cancer: grading and staging. Manjunath S. Vadmal and Payam Saadat, Los Angeles, CA
- 10:45 am [30] Cutaneous basaloid neoplasms. L. Brannon Thomas et al., Tampa, FL
- 11:15 am [31] Nonalcoholic steatohepatitis in children. Nina Tatevian et al., Houston, TX
- 11:45 am [32] Beta-catenin expression in benign and malignant pleural disorders. Waseem Q. Anani et al., Hershey, PA
- noon [33] Non-uremic calciphylaxis in a patient with autoimmune myelofibrosis. Manjunath S. Vadmal and Payam Saadat, Los Angeles, CA
- 12:15 pm Luncheon recess

### Luncheon Sponsored by the Section on Clinical Science in Practice

(Jefferson Manor Room)  
Frederick Muschenheim, Chair

- 12:20 pm [34] The clinical laboratory in the future of personalized healthcare. Roland Valdes Jr., Louisville, KY

### Session I: Frontiers of Clinical Science (Peraux Room)

*(Session I is concurrent with Session L)*

Robert E. Brown & Manjunath S. Vadmal, Chairs

- 1:45 pm [35] **Workshop on multispectral imaging: revolutionary instrumentation for anatomic pathology.** Robert C. Hunter and Robert E. Brown, Houston, TX
- 2:45 pm [36] Touchscreen procedure templates in the surgical pathology gross laboratory. Joseph A. DelTondo et al., Hershey, PA
- 3:00 pm [37] Experiential learning in quality improvement education for residents. Dani S. Zander et al., Hershey, PA
- 3:15 pm [38] Implementation of cancer protocols: standardization and acceptance. Philip Foulis and Leah Strickland-Marmol, Tampa, FL

## Saturday, 15 May 2010 (continued)

- 3:30 pm [39] Evidence-based practice in clinical laboratory science.  
Elizabeth Kenimer Leibach, Augusta, GA
- 3:45 pm [40] Optimization of C4d for automated immunohistochemistry on formalin-fixed paraffin-embedded tissue. Atif Ahmed et al., Kansas City, MO
- 4:00 pm Refreshments

### Session J: Therapeutics & Toxicology

(St. Anthony Club)

(*Session J is concurrent with Session G*)

Donald Forman & George B. Kudolo, Chairs

- 8:00 am [41] When things go wrong with properly prescribed medicines: lessons from postmortem forensic toxicology.  
George B. Kudolo, San Antonio, TX
- 8:15 am [42] Pharmacogenomics of ethanol, nicotine, and codeine.  
Wieslaw Furmaga, San Antonio, TX
- 8:30 am [43] Toxic effects of herbal medicines. Amitava Dasgupta, Houston, TX
- 8:45 am [44] Prescription drugs and human performance impairment. Ashraf Mozayani et al., Houston, TX
- 9:00 am [45] Monitoring compliance in patients with chronic pain requires lower drug cut-offs and more specific assays.  
Amadeo Pesce et al., San Diego, CA
- 9:15 am [46] Alcohol abuse, an evolutionary metabolic syndrome.  
Joseph C. Parker, Jr., Louisville, KY
- 9:45 am Refreshments

### Session K: Informatics & Clinical Biochemistry

(St. Anthony Club)

(*Session K is concurrent with Session H*)

(Sidney M. Hopfer & John Savory, Chairs)

- 10:00 am [47] The emergence of computer technology in clinical pathology and its vital role in reducing costs and improving patient care. John Savory, Charlottesville, VA
- 10:30 am [48] Use of a novel camera system and optical character verification to identify mislabeled specimens. Charles D. Hawker, Salt Lake City, UT
- 10:45 am [49] Measuring crosstalk ratios in biological pathways. Mary F. McGuire et al., Houston, TX
- 11:00 am [50] Variation in urinary myoinositol in renal disorders.  
Barry I Freedman and Zak K. Shihabi, Winston-Salem, NC
- 11:15 am [51] **Workshop on quantitative real-time PCR.**  
P. Alan Lennon, Houston, TX
- 12:15 pm Luncheon recess

### Session L: Clinical Science in Practice

(St. Anthony Club)

(*Session L is concurrent with Session I*)

(Raymond W. Ryan & Vincent A. DeBari, Chairs)

- 1:45 pm [52] Zygomycosis in immunocompromised individuals.  
Annette W. Fothergill, San Antonio, TX.
- 2:15 pm [53] Methicillin-resistant *Staphylococcus aureus* (MRSA) screening at Memorial Healthcare System in South Florida.  
Frederick L Kiechle and Rodney C. Arcenas, Hollywood, FL
- 2:30 pm [54] Epidemiology and vancomycin susceptibility of MRSA at Hershey Medical Center. Klaudia Kosowska-Shick et al., Hershey, PA
- 2:45 pm [55] Biomarkers for prolonged QT interval syndrome in HIV-infected subjects. H Shaaban et al, Newark, NJ
- 3:00 pm [56] Association of hypophosphatemia with failure to wean from mechanical ventilation. Mohammed Alsumarain et al., Newark, NJ
- 3:15 pm [57] Medical contributions of the surged vitamin D test. Pai C. Kao, Rochester, MN
- 3:45 pm [58] Vitamin D: wonder drug or just hype? Clive Hamlin, Cleveland, OH
- 4:00 pm Refreshments

### Business Meeting of the Association

(4:15 pm, St. Anthony Club)

Charles D. Hawker, President

### Association Musicale and Art Show

(7:30 pm, Georgian Room)

with wine and cheese reception during intermission.

Organized by Myra L. Wilkerson for the  
Committee on Music and Fine Arts

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### Annals of Clinical & Laboratory Science Online

The *ACLS-Online*, produced with Stanford University's HighWire Press, contains the full text of the *Annals* back to 2001. The internet address of *ACLS-Online* is <http://www.annclinlabsci.org>. To access the *Annals*, members of the Association use the ID number printed at the top of each address label for the *Trumpet* and the *Annals of Clinical & Laboratory Science*.

### Association Diplomas

Association members may purchase a hand-engrossed diploma that certifies his/her fellowship in the Association. The diplomas are signed by officers of the Association and affixed with the Association's official seal. To order a diploma, send a check or credit card payment for \$45 to the Secretary-Treasurer's office. The engrossing and signing of diplomas is performed each year in December and May, so diploma orders must be received by early November or early April.

# ASSOCIATION OF CLINICAL SCIENTISTS

## Registration Form for the Annual Meeting in San Antonio, Texas, on 12 to 16 May 2010

Last Name	First Name	Initial	Degree
Institution		Street Address	
City	State	Zip	
Telephone #	Fax #	e-mail address	
			No. of persons
			Charge (\$)
Meeting Registration (\$395 Regular; \$295 Junior or Emeritus) (includes one ticket to the Reception and Banquet)			_____
Thursday Lunch - Section on Hematology and Transfusion Medicine (\$30)			_____
Friday Afternoon - Special Bus Tour of San Antonio Attractions (\$30)			_____
Friday Evening - Additional Ticket for Reception and Banquet (\$85)			_____
Saturday Lunch - Section on Clinical Science in Practice (\$30)			_____
Saturday Evening - Musicale & Art Show, with wine and cheese reception			_____ <u>gratis</u>
TOTAL PAYMENT ENCLOSED:			_____

Please send this form with a check, payable to Association of Clinical Scientists, to F William Sunderman Jr MD, PO Box 1287, Middlebury, VT 05753. Alternatively, you may charge American Express, Visa, or MasterCard (circle which one). Please give your credit card number and expiration date, and sign below. If you pay by credit card, you may send this form by fax to 802 458 3278. Cancellation with full refund will be accepted until 10 April 2010.

Card No.: \_\_\_\_\_ Expiration (mo, year): \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

**ASSOCIATION OF CLINICAL SCIENTISTS**  
**F William Sunderman Jr MD, Secretary-Treasurer**  
**PO Box 1287, Middlebury, VT 05753**

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