# SURFACES IN BIOMATERIALS SYMPOSIUM

**Sponsored by**
**Perkin-Elmer Corporation**
**Physical Electronics Division**

Acknowledges the following individuals for their assistance

Symposium Chairman: Professor Joseph A. Gardella, Jr., Ph.D.
Center for Biosurfaces
State University of New York at Buffalo

Organizing Committee: Dr. George L. Grobe, III, Baush & Lomb
Rosealee M. Lee, ARDEL, Inc.
Dr. Lawrence Salvati, Jr., Perkin-Elmer Corporation

Keynote Presenters: Joseph D. Andrade, Jr.
Robert E. Baier
Thomas Beebe, Jr.
David G. Castner
Stuart L. Cooper
Paul Martakos
Piran Sioshansi
Matthew Tirrell
David F. Williams

# Thursday, October 10, 1991

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|---|---|---|---|
| 8:00 AM | Welcome — Paul Palmberg, Perkin-Elmer, Physical Electronics, and Joseph A. Gardella, Jr., Center for Biosurfaces, State University of New York at Buffalo | | Atrium Three |
| 8:15 AM | **Keynote Address:** **Improved Passivation of Implantable Biomaterials by Glow-Discharge Processes** | **Robert E. Baier** | NSF Industry/University Cooperative Research Center for Biosurfaces |
| 9:00 AM | **Keynote Address:** **The Development of the Host Response to Material Surfaces** | **David F. Williams** | University of Liverpool, United Kingdom |
| 9:45 AM | **Effects of Low-level Electric Current Stimulation on Eukaryotic Cell Proliferation** | G. D. O'Clock, Jr.<br>J. E. Gannon<br>M. Lyte | Mankato State University |
| 10:05 AM | **Mechanism Study on the Prevention of Surface-induced Platelet Activation by Adsorbed Albumin** | M. M. Amiji<br>K. Park | Purdue University |
| 10:25 AM | **Break** | | |
| 10:45 AM | **Keynote Address:** **Proteins at Interfaces: Principles Relevant to Protein-based Devices** | **Joseph D. Andrade, Jr.** | University of Utah |
| 11:30 AM | **Surface Characterization of Minimal Peptide Sequences Covalently Attached to Modified Fluoropolymers** | T. G. Vargo<br>J. A. Gardella, Jr. | State University of New York at Buffalo |
| 11:50 AM | **Cell Attachment, Growth and Differentiation Properties of Neuroblastoma Cells on Modified FEP Teflon** | J. Ranieri<br>R. Bellamkonda<br>P. Aebischer | Brown University |
| 12:10 PM | **Lunch Break** | | |
| 1:30 PM | **Keynote Address:** **Ion Beam Processing of Biomaterials** | **Piran Sioshansi** | Spire Corporation |
| 2:15 PM | **Static Secondary Ion Mass Spectrometry of Synthetic Peptides** | D. S. Mantus<br>B. D. Ratner<br>J. F. Moulder | University of Washington |
| 2:45 PM | **The Applicability of Mossbauer Spectroscopy for Studying Passive Surface Layers on Orthopaedic Implant Alloys** | I. Czakó-Nagy<br>A. Vértes<br>P. Kovacs<br>J. A. Davidson | Eotvos Lorand University, Hungary |
| 3:05 PM | **Break** | | |
| 3:25 PM | **Perkin-Elmer, Physical Electronics Award for Excellence in Surface Science Presentation**<br>1991 Award Winner, Buddy D. Ratner, Ph.D., National ESCA and Surface Analysis Center for Biomedical Problems, University of Washington, Seattle, WA | | |
| 4:10 PM | **The Use of Electrochemical Impedance Spectroscopy for Studying Passive Layer Characteristics on Orthopaedic Implant Alloys** | P. Kovacs | Smith & Nephew Richards, Inc. |
| 4:30 PM | **Interactions Between Titanium Surface Chemistry, Adsorbed Molecules, and Tissue Response** | K. E. Healy<br>P. Ducheyne | Northwestern University |
| 4:50 PM | **Surface Science Studies on the Adhesion of Glass Ionomer Cements to Dentin** | A. Lin<br>N. S. McIntyre<br>R. D. Davidson | University of Western Ontario, Canada |
| 5:10 PM | End of Scientific Sessions | | |

# Friday, October 11, 1991

Atrium Three

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| 8:15 AM | **Keynote Address:**<br>**Direct Measurement of Forces Between Polymer Surfaces** | **Matthew Tirrell** | University of Minnesota |
| 9:00 AM | **Keynote Address:**<br>**What Have We Learned About Biomolecules with STM and AFM?** | **Thomas Beebe, Jr.** | University of Utah |
| 9:45 AM | **Surface Characterization of Langmuir-Blodgett Films using SPI-SALI and TOF-SIMS** | V. F. Guarisco<br>S. G. Mackay<br>R. W. Linton | University of North Carolina at Chapel Hill |
| 10:05 AM | **Chemical Characterization of Surface Treatments for Hydrogel Contact Lens** | W. Katz<br>G. L. Grobe<br>P. L. Valint<br>D. Hahn | Evans Central |
| 10:25 AM | **Break** | | |
| 10:45 AM | **Keynote Address:**<br>**Polymeric Biomaterials: The Relationship Between Surface Structure and Biological Performance** | **David G. Castner**<br>Buddy D. Ratner | University of Washington |
| 11:30 AM | **X-Ray Photoelectron Spectroscopy Vis-a-vis Bioinorganic Chemistry. Substituent Effects in Porphyrins** | A. Ghosh<br>P. G. Gassman<br>J. Almlöf | University of Minnesota |
| 11:50 AM | **Surface Structure of F-75: The Effects of Passivation** | J. A. Gardella, Jr.<br>G. L. Grobe III<br>L. Salvati, Jr. | State University of New York at Buffalo |
| 12:10 PM | **Lunch Break** | | |
| 1:30 PM | **Keynote Address:**<br>**Surface Characterization of Polyurethane Biomaterials** | **Stuart L. Cooper** | University of Wisconsin |
| 2:15 PM | **Surface Characterization of Polymers for Contact Lens Use** | G. L. Grobe<br>P. L. Valint<br>J. A. Magee,<br>G. O. Friends<br>D. A. Cole | Bausch and Lomb |
| 2:35 PM | **A Graphical Method for Predicting Protein and Detergent Adsorption Properties** | E. A. Vogler<br>D. A. Martin<br>D. B. Montgomery | Becton Dickinson |
| 2:55 PM | **Break** | | |
| 3:15 PM | **Keynote Address:**<br>**Applications of Biomaterials Surface Analysis in R & D and QA** | **Paul Martakos** | Atrium Medical Corporation |
| 4:00 PM | **Surface Preparation of a Biologically-Active Ceramic Composite for Tooth Root Implants** | G. G. Niederauer<br>T. D. McGee | Iowa State University |
| 4:20 PM | **XPS Characterization of Heat Treated Ca-P Coatings** | J. L. Ong<br>L. A. Harris<br>L. C. Lucas<br>W. R. Lacefield<br>E. D. Rigney | University of Alabama at Birmingham |
| 4:40 PM | **End of Scientific Sessions** | | |

# *Buddy D. Ratner, Ph.D.*

# 1991 Winner

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