

THIRTIETH ANNUAL MEETING  
of the  
TISSUE CULTURE ASSOCIATION

June 10-14, 1979

The Olympic Hotel, Seattle, Washington

PROGRAM COMMITTEE

Nelly Auersperg, *Chairman*

Vincent J. Cristofalo (*Ex-Officio*)  
Robert T. Dell'Orco (*Co-Chairman*)  
Stephen D. Hauschka  
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Gerald J. McGarrity

Toshio Murashige  
Leonard R. Murrell  
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Monroe M. Vincent (*Ex-Officio*)  
Judith H. Willis  
George Yerganian (*Ex-Officio*)

MONDAY MORNING—June 11, 1979

Grand Ballroom

Symposium

GENE TRANSFER, DIFFERENTIATION AND NEOPLASIA IN PLANT AND ANIMAL CELLS

*Conveners:* Armin C. Braun, Rockefeller University, New York, New York  
George M. Martin, University of Washington, Seattle, Washington

- 8:30 Welcoming Remarks. **KEITH R. PORTER**, University of Colorado, Boulder, Colorado.  
*President*, Tissue Culture Association.
- 8:40 S-1. Liposomes: Vehicles for Cellular Incorporation of Biologically Active Macromolecules.  
**DEMETRIOS PAPAHDJOPOULOS**, University of California, San Francisco, California.
- 9:10 S-2. Gene Transfer and the Mapping of Genes in Hybrid Cells. **THOMAS B. SHOWS**, Roswell Park Memorial Institute, Buffalo, New York.
- 9:40 S-3. Questions from the Floor
- 9:45 S-3. Mouse Teratocarcinomas as Models for the Study of Gene Transfer, Differentiation and Neoplasia. **KARL ILLMENSEE**, University of Geneva, Geneva, Switzerland.
- 10:15 Questions from the Floor.
- 10:20 Coffee Break
- 10:40 S-4. Genetic Aspects of Tumor Suppression and Reversal in Plants. **ARMIN C. BRAUN**, Rockefeller University, New York, New York.
- 11:10 S-5. Foreign DNA Sequences in Crown Gall Teratoma and Their Fate During the Loss of the Tumorous Traits. **EUGENE W. NESTER**, F. Yang, M. D. Chilton and M. P. Gordon, University of Washington, Seattle, Washington.
- 11:40 Questions from the Floor.
- 11:45 S-6. The Analysis of Malignancy by Cell Fusion. **E. SIDEBOTTOM**, Sir William Dunn School of Pathology, Oxford University, Oxford, England.
- 12:25 Questions from the Floor.

Numbers preceding titles refer to abstracts.  
Capitalization identifies speaker; asterisk (\*) identifies member.  
†Submitted for Wilton R. Earle Award.  
#Submitted for Honor B. Fell Award.

## MONDAY AFTERNOON—June 11, 1979

Colonial

## Contributed Papers: Aging.

Conveners: V. J. Cristofalo  
J. M. Ryan

- 2:00 1. Heat Labile Enzymes in Erythrocytes of Two Progeric Families. W. T. BROWN and G. J. Darlington.\*
- 2:15 2. The Effect of In Vitro Aging on Collagen Synthesis in Arterial Smooth Muscle Cells. L. L. SALCEDO\* and C. Franzblau.
- 2:30 3. Aged Human Fibroblasts Release Altered Cell Surface Proteins. S: CHANDRASEKHAR\* and A. J. T. Millis.\*
- 2:45 4. DNA Repair in Cells from Mouse Skin Cultures as a Function of Donor Age. J. J. BERGER, R. L. Meek and C. W. Daniel.\*
- 3:00 5. An Analysis of Sister Chromatid Exchange Frequencies in Lymphocytes from Patients with Progeria. G. J. DARLINGTON\* and W. T. Brown.
- 3:15 Coffee Break
- 3:30 6. Stimulation of DNA Synthesis in BrdU Selected Non-Dividing WI-38 Cells. P. D. PHILLIPS, K. Woolwich and V. J. Cristofalo.\*
- 3:45 7. Intrinsic Aging of Human Epithelial Lens Cells: An In Vitro Study. J. Tassin and Y. COURTOIS.\*
- 4:00 8. Replicative Life Span (RLS) of Human Diploid Fibroblasts In Vitro: Precision of Assay Technique. R. VRACKO.\*
- 4:15 9. Age Distribution Within Subclones of Human Diploid Fibroblasts. R. G. WHITNEY and J. R. Smith.\*
- 4:30 10. Bimodal Distribution of Decrements During Aging of Fibroblasts and *Paramedium*. R. MARTIN, A. Lukton and S. N. Salthe.

## MONDAY AFTERNOON—June 11, 1979

Rex

## Contributed Papers: Virology and Immunology.

Conveners: P. J. Chapple  
E. Rosanoff

- 2:00 11. Suppression of Foamy Virus in Baboon Kidney Cultures (*Papio cynocephalus*). S. A. WEISS,\* T. L. Lester, S. S. Kalter,\* and R. L. Heberling.\*
- 2:15 12. Characterization and Viral Susceptibility of a Fetal Equine Liver Cell Line — GML-232. G. ORO\* and G. Justines.
- 2:30 13. Tissue Culture Studies on Embryos of Hamsters Injected With H-1 Parvovirus During Pregnancy. H. W. TOOLAN.\*
- 2:45 14. Choice of Complement as Determinant of Sensitivity in Complement Fixation Assays. J. SETHI\* and Y. Hirshaut.\*
- 3:00 Coffee Break
- 3:15 15. Interaction of Herpesviruses with Lymphoblastoid Cells. L. FALK,\* M. D. Daniel\* and N. King.
- 3:30 16. Large-Scale Production and Concentration of Infectious (P3HR-1) and Transforming (B95-8) Epstein-Barr Virus. G. SHIBLEY, I. Zelljadt, L. Fisher, K. Munch, K. Harewood, R. Stephens and S. Mayyasi.
- 3:45 17. Epstein-Barr Virus (EBV) DNA Synthesis Induced by Superinfection: P3HR-1 Virus and Various Cell Lines. P. S. ECKLUND.
- 4:00 18. Paul-Bunnell Antigen Studies in Human and Murine Malignancy. A. FJELDE.\*
- 4:15 19. Generation of Rapidly Infecting Variants of Mouse Mammary Tumor Viruses In Vitro. D. K. HOWARD and J. Schlom.\*
- 4:30 20. In Vitro Isolation and Characterization of Retroviruses from <sup>90</sup>Sr-Induced Osteosarcomas. C. K. LEE, E. W. Chan, C. A. Reilly, Jr., M. P. Finkel, G. Rockus and V. A. Pahnke.\*

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†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

## MONDAY AFTERNOON—June 11, 1979

## Regents

## Contributed Papers: Mutagens, Carcinogens and DNA.

*Conveners:* D. E. Rounds

P. S. Sabharwal

- 2:00 21. The Use of Sister Chromatid Exchange Analysis to Detect Ambient Mutagens in Drinking Water. R. R. GUERRERO and D. E. Rounds.\*
- 2:15 22. Promotion of Sister Chromatid Exchange by TPA in V79 Chinese Hamster Cells. J. M. LOCKARD,\* O. Chortyk and P. S. Sabharwal.\*
- 2:30 23. Effect of Benzene and its Metabolites on SCE in Human Lymphocytes Cultures. M. Diaz, N. Fijtman, V. Carricarte, L. Braier and J. DIEZ.\*
- 2:45 24. Induction of Increased Frequencies of Sister Chromatid Exchange in V79 Cells by Butyric Acid. C. C. TAI and R. C. Ting.\*
- 3:00 25. Induction of Sister Chromatid Exchange and Polyploidy by Carbaryl in V79 Cells. P. S. SABHARWAL\* and J. M. Lockard.\*
- 3:15 Coffee Break
- 3:30 26. Sister Chromatid Exchange (SCE) in Human Diploid Fibroblasts Induced by Mutagens With and Without Rat Liver Microsomal Activation. D. P. YANG,\* F. Graupensperger,\* L. C. Minecci and B. A. Rubin.
- 3:45 27. Unscheduled DNA Synthesis in Rat Mammary Cells of Different Physiological States Exposed to Chemical Carcinogens In Vitro and In Vivo. J. E. RICHARDS\* and P. D. Bowman.\*
- 4:00 28.† The Relationship Between Morphology and Ornithine Decarboxylase Activity in Cultured Human and Hamster Cells. S. T. WARREN, J. R. Moskal, P. A. Mason, C. C. Sweeley and J. E. Trosko.\*
- 4:15 29. Effect of Ultraviolet Light and 8-Methoxypsoralen on Epidermal Melanocytes in Organ Cultures of Human Skin. P. KAMEN, T. Garcia and G. Szabo.\*

## MONDAY AFTERNOON—June 11, 1979

## University

## Contributed Papers: Tumor Cells: Model Systems.

*Conveners:* E. Y. Lasfargues

J. Leighton

- 2:00 30. Chemical Carcinogen-Induced Malignant Transformation of Epithelial Cells in Organ Culture of the Whole Mammary Gland. N. T. Telang,\* A. B. Kundu, A. P. Iyer and M. R. BANERJEE.\*
- 2:15 31. Tissue Interactions and Cell Surface Morphology in Human Breast Carcinomas. R. C. ARMSTRONG.
- 2:30 32. Histophysiologic Diffusion Gradient Culture, a Method for Three Dimensional Growth of Complex Tissues. J. LEIGHTON,\* M. Goldberg and R. Stein.
- 2:45 33. Cell 'Desorption' During Growth of Multicell Spheroids. J. LANDRY,\* C. K. N. Li and R. M. Sutherland.
- 3:00 34. Cell Aggregation Viability Test (CAV) as a Tool to Detect Changes in Epithelial Cells Grown In Vitro. E. Y. LASFARGUES,\* J. C. Lasfargues and C. S. Robinson.
- 3:15 35.† Selective Dissociation of Cells from Multicell Spheroids. J. P. FREYER\* and R. M. Sutherland.
- 3:30 Coffee Break
- 3:45 36.† Growth Kinetics of Rat Mammary Gland Epithelial Cells in Culture. J. RUSSO\* and G. Wilgus.
- 4:00 37. Isolation and Use of Phenotypically Different Subpopulations from a Mammary Cell Line to Study Metastasis. K. G. DANIELSON, L. W. Anderson and H. L. Hosick.\*
- 4:15 38. Matrix Perfusion Cell Culture System for Cancer Chemotherapeutic Agents. J. M. QUARLES,\* N. G. Morris and A. Leibovitz.\*

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- 4:30 39. Drug Sensitivity Assay on Malignant Human Urogenital Tumor Cells. **D. D. MICKEY,\*** S. Shrivastav and D. F. Paulson.
- 4:45 40. Differential Sensitivity of Human Cell Lines to Anti-Cancer Drugs. **H. LAZARUS,\*** B. Malone, K. Wade and E. Barell.

MONDAY AFTERNOON—June 11, 1979

Olympic Bowl

POSTER SESSION I

Posters will be on display from 1:30 until 10:00 p.m.

Odd Numbered Posters will be attended by the Author(s) . . . . . 1:30 - 3:00 p.m.

Even Numbers. . . . . 3:00 - 4:30 p.m.

PLANT TISSUE CULTURE

41. Tissue Culture of Albino *Pinus sylvestris* seedlings. **S. VENKETESWARAN\*** and O. Huhtinen.
42. Characterization of Germination of *Hemileia vastatrix* Uredospores In Vivo and In Vitro. **M. M. ALVES DE LIMA,\*** M. R. Sondahl and P. O. Larsen.
43. Improved Rate of Callus and Green Plant Production from Rice Anther Culture Following Cold-Shock. **A. D. GENOVESI\*** and C. W. Magill.
44. Sorghum Microspore Development In Vitro. **R. H. SMITH.\***
45. Somatic Embryogenesis in *Gossypium*. **H. J. PRICE** and R. H. Smith.\*
46. Tissue Culture Propagation of Red Raspberry. **W. C. ANDERSON.\***
47. Micropropagation of *Atriplex canescens*. **Z. S. WOCHOK\*** and C. J. Sluis.
48. In Vitro Morphogenesis in *Brassica* Species: Apical Meristem Culture. **H. UCHIMIYA,** J. F. Reynolds, N. E. Silberman and R. H. Lawrence, Jr.\*
49. A Comparison of Bud Formation in Tissues of Black (*Picea mariana* Mill Brit) and White Spruce (*P. glauca* Moench Voss) Grown In Vitro. **C. RUMARY** and T. A. Thorpe.\*
50. Isolation of Herbicide Resistant Plants from Cell Cultures of *Nicotiana tabacum*. **O. K. Miller** and **K. W. HUGHES.\***
51. Flowering of Shoot Apices of *Pharbitis nil* Cultured In Vitro. **K. M. TEMPLETON\*** and M. G. Cline.

BIOCHEMISTRY

52. Conditions Affecting Enzyme Inducibility in Suspensions and Primary Monolayer Cultures of Adult Rat Liver Parenchymal Cells. **P. BELLEMAN,\*** J. A. Gurr and V. R. Potter.
53. Inhibition of Adenylate Cyclase Activity by 3'-Deoxyadenosine (Cordycepin). **P. R. KERKOF\*** and J. H. Nilson.
54. Studies on the Mechanism of Induction of Alkaline Phosphatase in HeLa Cells by Rosenthal's Inhibitor. **G. MELNYKOVICH,\*** A. M. Fiskin and S. C. Miller.
55. Calcium, Cyclic AMP and the Regulation of Liver Cell Proliferation. **A. L. BOYNTON,** J. F. Whitfield,\* S. H. H. Swierenga,\* B. Tsang and J. P. MacManus.
56. Energy Metabolism During the Growth Response of 3T3 Mouse Cells. **R. SINCLAIR.\***
57. Comparative Studies of <sup>23</sup>Na and Water Proton Relaxation Times in Normal, Preneoplastic, Carcinogen-Altered and Transformed Epithelioid Cell Lines. **J. A. Magnuson, J. R. STARKEY** and D. Appel.
58. Cell Injury Induced by Oxygen and Glucose Deprivation in Primary Cultures of Rat Heart Endothelial Cells. **D. ACOSTA\*** and C. P. Li.
59. Molecular Heterogeneity of the Con A. Tetramer: Biological Effects. **P. G. PHILLIPS\*** and P. Horowitz.
60. Role of Glutathione in Cystine Accumulation in Cells From Cystinotics. **B. STATES\*** and S. Segal.
61. o-Demethylation of p-Nitroanisole and Conjugation of p-Nitrophenol by Primary Liver Cell Cultures. **D. C. ANUFORO,\*** D. Acosta\* and R. V. Smith.

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62. Methotrexate Metabolism in Hepatic Cells in Culture. J. GALIVAN.  
 63. The Development of a Toxicity Test System Using Primary Liver Cells. J. L. HUISINGH,\*  
 J. P. Inmon, L. C. King, A. Stead and M. D. Waters.\*

## METHODS

64. People Protection and Tissue Culture Safety. A Report From the Ad Hoc Committee on  
 Materials and Supplies of the Tissue Culture Association, Inc. E. M. EARLEY.\*  
 65. Mycoplasma Infection of Cells Grown in Chemically-Defined Medium. R. W. BUSSIAN\*  
 and C. W. Carlson.\*  
 66. Large Scale Animal Cell and Virus Production in a pH-Controlled Circumfusion System. L.  
 KEAY\* and C. W. Burton.  
 67. Minimal Manipulation Microtechnique for Preparing Tissue Culture Cells for Scanning Elec-  
 tron Microscopy. S. A. HENSEN,\* M. M. Vincent\* and G. W. Fischer.  
 68. A Cell Culture System for the Experimental Manipulation of the Golgi Complex. R. T.  
 DELL'ORCO\* and W. H. J. Douglas.\*  
 69. A Method for the Isolation and Propagation of Bovine Tracheobronchial Epithelial Cells.  
 L. A. BARRETT\* and B. F. Trump.  
 70. Optimum Culture Conditions for Human Epidermal Cells. P. HAWLEY-NELSON, S.  
 Yuspa, H. Hennings\* and J. Sullivan.  
 71. Newborn Rat Liver Cells in Primary Monolayer Cultures. N. MARCEAU,\* J. Deschênes, A.  
 Robert and J.-P. Valet.  
 72. Isolation and Cultivation of Intestinal Cells. D. J. SKRYPEC and M. R. Bennink.  
 73. Hydroxyurea-Induced Progression Effects on HeLa G<sub>2</sub> Cells. L. E. SHECK\* and C. S.  
 Lange.

MONDAY EVENING—June 11, 1979 8-10 p.m.

## ROUND TABLES

- Transformation in Vertebrate, Invertebrate and Plant Tissues. Williamsburg  
*Conveners:* C. J. Dawe  
 J. L. Vaughn  
 F. Meins, Jr.
- Replacement of Serum by Hormones in Cell Culture Media. Pacific/Evergreen  
*Conveners:* G. H. Sato  
 H. Coon
- Honor B. Fell Division. Rex  
 Review of Techniques Used in Transmission and  
 Scanning Electron Microscopy in Organ Culture.  
*Conveners:* W. H. J. Douglas  
 T. Wight  
 (Preceded by Honor B. Fell Division Business  
 Meeting at 7:30 p.m.)
- Sera and Contamination Committee. Colonial  
 An Update in Microbial Contamination.  
*Conveners:* H. E. Hopps  
 M. F. Barile

TUESDAY MORNING, June 12, 1979

Williamsburg

## SESSION IN DEPTH

- Progress on Genetic Manipulation of Somatic Plant Cells.  
*Convenor:* J. W. Einset, University of California, Department of Botany and Plant  
 Sciences, Riverside, California

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- 8:30 Introduction. **J. W. EINSET.\***  
 8:45 74. Isolation and Characterization of Somatic Cell Mutants. **G. E. JONES.**  
 9:30 75. Uses of Somatic Cell Mutants in Genetic Research. **A. KLEINHOF'S.**  
 10:15 Coffee Break  
 10:30 76. Studies on Seed Storage Protein Genes and the Potential for Introducing Them Into Plant Protoplasts. **B. A. LARKINS.**  
 11:15 77. Regulation of Crown Gall in Plant Cells. **J. W. EINSET.\***

**TUESDAY MORNING—June 12, 1979**

University

**SESSION IN DEPTH****What Constitutes a Legitimate Differentiated Trait in Cultured Cells?**

*Conveners:* **M. J. Bissell** and **J. T. Emerman**, Lab of Chemical Biodynamics, University of California, Berkeley, California

- 8:30 78. Ultrastructural Morphology of Cultured Human Mammary Epithelial Cells. **A. J. HACKETT,\* E. L. Springer, H. S. Smith** and **M. Stampfer.**  
 9:00 79. Studies on Liver Differentiation Using Cultures of Non-Dividing Adult Liver Parenchymal Cells. **R. J. BONNEY** and **C. R. Savage.**  
 9:30 80. Metabolite Patterns as Differentiated Markers in Mammary Epithelial Cells. **J. T. EMERMAN,\* S. J. Burwen** and **M. J. Bissell.**  
 10:00 Coffee Break  
 10:20 81. Arterial Smooth Muscle, 3T3 Cells and Endothelium and the Platelet-Derived Growth Factor. **R. ROSS\* and S. M. Schwartz.**  
 10:50 82. Nodule Formation in Cultures of Bovine Articular Chondrocytes. **R. K. Schenk, B. U. PAULI,\* J. C. Daniel** and **K. E. Kuettner.**  
 11:05 83. Cells Cultured From Rat Brain Synthesize Immunoreactive Insulin. **M. K. RAIZADA,\* J. A. Wayhenmeyer** and **R. E. Fellows.\***

**TUESDAY MORNING, June 12, 1979**

Regents

**SESSION IN DEPTH****Mycoplasma Infection of Cell Cultures.**

*Conveners:* **G. J. McGarrity**, Department of Microbiology, Institute for Medical Research, Camden, N. J.

**M. F. Barile**, Bureau of Biologics, Food and Drug Administration, Bethesda, Maryland

- 8:30 Introduction. **G. J. MCGARRITY.\***  
 8:35 84. Mycoplasmas of Vertebrates, Plants and Insects. **J. G. TULLY.\***  
 9:05 85. Isolation and Detection of Mycoplasmas. Status Report. **M. F. BARILE.\***  
 9:35 Coffee Break  
 9:50 86. Effects of Mycoplasmas on Cell Culture Systems. **G. J. MCGARRITY.\***  
 10:20 87. Mycoplasma-Lymphocyte Interactions. **B. C. COLE.**  
 10:50 88. Fish Cell Lines: Bisbenzamide Staining for the Detection of Contamination. **B. C. LIDGERDING,\* P. E. McAllister** and **C. L. Schultz.\***  
 11:05 89. Scanning Electron Microscopy of *Mycoplasma pneumoniae*. Attachment to Ciliated Epithelial Monolayers. **M. G. GABRIDGE,\* M. J. Bright, H. Sandberg** and **R. MacLeod.**  
 11:20 Discussion

**TUESDAY MORNING—June 12, 1979**

Georgian

**Contributed Papers: Hormones, Growth Factors and Defined Media**

*Conveners:* **W. L. McKeehan**  
**C. Waymouth**

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- 8:30 90. A Chemically-Defined *Serumless* Medium is Permissive for In Vitro Fetal Tooth Morphogenesis, Histogenesis, Cytodifferentiation and Dentine and Enamel Formation. M. YAMADA,\* P. Bringas, Jr. and H. C. Slavkin.
- 8:45 91. Serum-Free Medium for Insect Cell Lines. M. A. BROOKS\* and K. R. Tsang.\*
- 9:00 92.† Application of a Hormone-Supplemented, Serum-Free Medium to Primary Kidney Cultures. M. TAUB\* and G. Sato.\*
- 9:15 93. Isolation of a Chinese Hamster Ovary Cell Variant With an Altered Serum Requirement and a Lengthened G<sub>1</sub> Phase of the Cell Cycle. J. P. O'NEILL\* and A. W. Hsie.\*
- 9:30 94.† Cell Cycle Dependent Serum Inhibition of Malignant Cell Growth. S. E. HENDERSON and E. V. Gaffney.\*
- 9:45 Coffee Break
- 10:00 95. Plasma Derived Human Serum as a Source of Cell Growth Inhibition. M. A. GRIMALDI, E. V. Gaffney\* and D. A. Pigott.
- 10:15 96. Mitogenic Activity of Acute Non Specific Inflammatory Exudate. J. P. GIROUD, M. Pelletier\* and I. Florentin.
- 10:30 97. Elimination of Survival Factor Requirement of Swiss 3T3 Mouse Embryo Cells. G. D. SHIPLEY and R. G. Ham.\*
- 10:45 98. The Identification and Characterization of a Growth Hormone Activator. T. MACIAG,\* R. Forand, P. Kelley\* and E. Canalis.
- 11:00 99. Effects of Growth Hormone and Somatomedins on Amino Acid Uptake by Rat Muscle Cells. D. Z. Ewton and J. R. FLORINI.\*
- 11:15 100. Pancreatic Ducts in Culture: Biochemical Characterization and Glucocorticoid Dependence. S. GITHENS,\* J. F. Whelan, H. K. Mayer, D. R. G. Holmquist and J. R. Ruby.
- 11:30 101. Effects of Some Agents on Cytochrome P-450 Content of Primary Liver Cell Cultures. D. C. ANUFORO,\* D. Acosta\* and R. V. Smith.

## TUESDAY AFTERNOON—June 12, 1979

Williamsburg

## Contributed Papers: Plant Tissue Culture.

Conveners: T. Murashige  
S. Venketeswaran

- 1:30 102. Callus Formation from Internode Segments of *Pueraria lobata*. M. R. THOMPSON and Z. S. Wochok.\*
- 1:45 103. The Effects of Organic Acids on Growth and Anthocyanin Production by Wild Carrot Cells Growing on Ammonia as a Sole Nitrogen Source. D. K. DOUGALL\* and K. Weyrauch.
- 2:00 104. In Vitro Studies on the Regulation of Certain Nitrogen Assimilatory Enzymes in <sup>60</sup>CO<sub>γ</sub>-Irradiated Callus Tissues of *Haworthia mirabilis*, Haw. K. N. Pandey\* and P. S. SABHARWAL.\*
- 2:15 105. Cytokinin Independence in Tissue Cultures of *Phaseolus*: A Genetic Trait. M. C. MOK\* and D. W. S. Mok.
- 2:30 106. Attempts at High Frequency Transformation of Plant Cells. S. L. DELLAPORTA and K. L. Giles.\*
- 2:45 107. Embryogeny of *Phaseolus coccineus*: The Suspensor and the Growth of Embryo-Proper In Vitro. E. C. YEUNG.
- 3:00 Coffee Break
- 3:15 108.† Hormonal Effects on Root Differentiation in Tissue Culture of *Triticum aestivum* L. W. H. LOH.\*
- 3:30 109. Hormonal Control of Growth and Morphogenesis in Cultured Leaf Explants of *Theobroma cacao*. S. B. MARAFFA\* and W. R. Sharp.\*
- 3:45 110. Initiation of Asexual Embryos of *Theobroma cacao*. V. C. PENCE, P. M. Hasegawa\* and J. Janick.
- 4:00 111. Selective Induction of Adventive Shoot and/or Root Morphogenesis in Cultured Lettuce Leaf Explants. A. A. GOLOFF, Jr., D. G. Black,\* J. B. Romano and R. H. Lawrence, Jr.\*
- 4:15 112. Histological and Histochemical Studies of Adventitious Shoot Formation From Embryonic Tissues of Radiata Pine. J. AITKEN and T. A. Thorpe.\*

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#Submitted for Honor B. Fell Award.

- 4:30 113. Energy Charge and Metabolite Level Changes During Shoot Formation in Tobacco Callus Cultures. **D. C. W. BROWN.**
- 4:45 114. Regeneration of Virus-Free Petunia, Tobacco and Brassica Plants From Green Islands of Mosaic-Infected Leaves. **H. H. MURAKISHI\*** and P. S. Carlson.

**TUESDAY AFTERNOON—June 12, 1979****Georgian****Contributed Papers: Growth and Differentiation.**

*Conveners:* K. S. McCarty, Sr.  
K. R. S. Fisher

- 1:30 115. Serum Control of Cyclic Immunoblastic Stem Cell Maturation In Vitro. **G. YERGANIAN.\***
- 1:45 116. The Role of Mitosis in the Differentiation of Mouse Mammary Cells. **L. TOLIN, J. Harbell and C. W. Daniel.\***
- 2:00 117.† Correlation of Ornithine Decarboxylase Activity with Proliferation of Yaffe's L6 Muscle Cells in Culture. **C. M. STOSCHECK, J. R. Florini\*** and R. A. Richman.
- 2:15 118. Induction of the Synthesis of Transition Metal Binding Proteins in CHO-K1 Cell Cultures. **K. S. McCARTY, SR.,\* G. Gick and K. S. McCarty, Jr.\***
- 2:30 119. Factors Modulating the Growth and Differentiation of Rat Lens Cells. **J. M. RYAN\*** and P. H. Walk.
- 2:45 Coffee Break
- 3:00 120.# Human Epidermal Cell Growth in a Controlled Culture Environment. **M. F. KULESZ-MARTIN.**
- 3:15 121. The Effect of 6-Diazo-5-Oxo-L-Norleucine (DON) on the Development of Mouse Tooth Germs In Vitro. **D. B. GALBRAITH\*** and B. L. Wolf.
- 3:30 122.# HCG Secretion and Immunochemistry of Human First Trimester Placenta in Organ Culture. **R. I. HUOT,\* J. M. Foidart, R. M. Nardone\*** and K. Stromberg.
- 3:45 123. Organ Culture of Adult Rat Descending Colon. **L. J. SCHIFF\*** and S. J. Moore.
- 4:00 124. Organ Culture of the Fetal Mouse Intestine. **H. Y. CHO\*** and A. Takeuchi.
- 4:15 125. Calcium Content and Calcium Requirements in Contracting Cultured Epithelial Cells. **H. C. Lee and N. AUERSPERG.\***
- 4:30 126. Calcium and Cyclic AMP Interplay in the Positive Control of In Vitro Hepatocyte Growth. **P. G. Andreis, E. Draghi,\* L. Mengato and U. ARMATO.\***
- 4:45 127. Isoproterenol Stimulates the Growth of In Vitro Adult Rat Parotid Acinar Cells. **L. Mengato, U. ARMATO,\* E. Draghi\*** and P. G. Andreis.

**TUESDAY AFTERNOON—June 12, 1979****University****Contributed Papers: Tumor Cells: Growth Characteristics.**

*Conveners:* E. Borenfreund  
E. V. Gaffney

- 1:30 128. Isolation of a Transformed Keratinocyte Cell Line from a 7,12-Dimethylbenzanthracene (DMBA) Induced Rabbit Skin Tumor. **R. H. SHOEMAKER, R. S. Lake\*** and H. J. Igel.
- 1:45 129. Epidermal Transformation: The Production of Differentiated Cell Lines under Improved Conditions of Culture. **D. R. MILLER,\* T. J. Slaga\*** and S. M. Fischer.
- 2:00 130. Growth of a Human Breast Cancer Cell Line (MCF-7) in a Defined, Serum-Free Medium. **D. W. BARNES and G. Sato.\***
- 2:15 131. Inhibition of Lymphoblastogenesis to Phytohemagglutinin by Autologous Serum Factors in Breast Cancer Patients. **D. O. CHEE,\* J. F. Krulisky, G. Adachi and R. H. Yonemoto.**
- 2:30 132. Neoplastic Potential of Cultured Insect Cells. **K. R. TSANG\*** and M. A. Brooks.\*
- 2:45 133. Characterization of Cell Cultures Derived from <sup>239</sup>Pu-Induced Tumors in Beagles. **T. K. ANDREWS\*** and M. E. Frazier.\*
- 3:00 134. Characteristics of Cell Cultures Derived from Hyperplastic Hemal Nodes. **G. F. AMBORSKI,\* R. L. Amborski and C. L. Seger.**

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (\*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.



- 3:15 Coffee Break
- 3:30 135. Effects of In Vitro Cultivation on Human Malignant Melanoma. **W. J. SMITH.\***
- 3:45 136. In Vivo Studies of Melanoma Cells Cultured with 5-Bromodeoxyuridine. **K. K. GYI** and **J. R. Wrathall.\***
- 4:00 137. Cell Subpopulations of a Cultured Human Tumor Differing by Rate of Growth In Vivo as Heterotransplants in Nude Mice and by Modal Chromosome Numbers. **B. C. GIOVANELLA,\*** **S. O. Yim** and **J. S. Stehlin.**
- 4:15 138. Colon Carcinoma Cell Lines from Four Patients. **G. E. MOORE,\*** **L. K. Woods,** **L. A. Quinn,** **R. T. Morgan** and **T. U. Semple.**
- 4:30 139. Further Studies on Tumorigenicity, Exclusion of HeLa Cell Contamination and Definition of Uniqueness by Polymorphic Enzyme Analysis of Cultured Human Tumor Cell Lines. **J. FOGH,\*** **W. Wright,\*** **W. P. Daniels,** **J. Tiso** and **T. Orfeo.**

**TUESDAY AFTERNOON—June 12, 1979**

**Regents**

**Contributed Papers: Methodology**

*Conveners:* **M. K. Patterson, Jr.**  
**W. R. Tolbert**

- 1:30 140. In Vitro Cultivation of *Trypanosoma muscoli*. **J. W. ALBRIGHT.\***
- 1:45 141. Contamination of Primary Bovine Kidney Cell Cultures with *Trypanosoma theileri*. **H. Y. KIM,\*** **C. D. Clark,** **J. N. Ersoz** and **L. Harrison.**
- 2:00 142. Some Problems Concerning Fetal Calf Serum. **G. SEMAN\*** and **C. A. Edwards.**
- 2:15 143. *Chlamydia* Culture Techniques and Applicability. **A. B. Glassman,\*** **J. P. Manos,** **N. M. Burdash,** **M. E. West** and **C. E. BENNETT.\***
- 2:30 144.† Preparation of Primary Cell Cultures from the American Oyster, *Crassostrea virginica*. **E. B. STEPHENS\*** and **F. M. Hetrick.\***
- 2:45 Coffee Break
- 3:00 145. A Method for the Identification of Individual Cells Secreting Prostaglandin In Vitro. **D. M. BRUNETTE,\*** **C. Birek,** **J. N. M. Heersche,** **H. M. Wang** and **M. Johnston.**
- 3:15 146.† Determination of Acute Cytotoxicity of Elemental Phosphorus (P<sub>4</sub>) by an In Vitro Clonal Assay Using Chinese Hamster Ovary Cells (CHO-K1). **M. T. WININGER,\*** **R. J. Hare,** **G. F. Brautigam,** **J. T. Hill,** **J. D. Wilson** and **W. D. Ross.\***
- 3:30 147. Protamine and Cell Adhesion on Microcarriers. **J. F. RAYMOND,** **P. Payment** and **M. Trudel.\***
- 3:45 148. Permeabilization of Mouse Leukemia L1210 Cells. **J. M. WOODEN,** **E. V. Higginbotham,** **E. J. Quinones,** **J. Mathews** and **L. H. Li.\***
- 4:00 149. Large-Scale Rotating Filter Suspension Culture Reactor. **W. R. TOLBERT,\*** **J. Feder\*** and **R. C. Kimes.\***
- 4:15 150. Liquid Nitrogen Freezing and Storage of Cultured Human Cells. **J. D. LOVELESS,** **T. Orfeo,** **R. Hernandez** and **J. Fogh.\***
- 4:30 151. A Micro-Method for Processing Amniotic Cells. **J. H. MELNYK,\*** **G. Persinger,\*** and **R. L. Teplitz.\***

**TUESDAY AFTERNOON—June 12, 1979**

**Olympic Bowl**

**POSTER SESSION II**

Posters will be on display from 1:30 until 10:00 p.m.

Odd Numbered Posters will be attended by the Author(s) . . . . . 1:30 - 3:00 p.m.

Even Numbers. . . . . 3:00 - 4:30 p.m.

**DIFFERENTIATION**

- 152. Cell Differentiation for Hemoglobin Synthesis: Functional Adaptation of tRNA. **V. K. LIN\*** and **P. F. Agris.\***
- 153. Modulation of Friend Erythroid Cell Differentiation by Normal Mouse Serum. **C. L. PARKER,\*** **S. Bartelmez** and **R. A. Davis.**

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (\*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

154. Mechanism of Hemoglobin Switching in Sheep Erythroid Precursors In Vitro. **J. E. BARKER** and **A. W. Nienhuis**.
155. Differing Responses by Murine and Human Macrophage-Granulocyte Colony Forming Cells to 3 Different Conditioned Media. **M. J. OTTENBREIT**, **S. Inoue\*** and **W. D. Peterson, Jr.\***
156. Modulation of In Vitro Proliferation of Pulmonary Macrophages by Oxygen Concentration. **Y. NAUM.\***
157. Corticosteroid-Dependence of Human Bone Marrow Preadipocyte Differentiation. **J. S. GREENBERGER.\***
158. Morphologic and Functional Characterization of Cultured Microvascular Endothelial Cells Obtained from Human Preputial Skin. **G. K. SHERER,\*** **T. P. Fitzharris** and **E. C. LeRoy**.
159. Factors for Growth and Differentiation of Rabbit Ear Chondrocytes. **B. J. WALTHALL**, **S. R. McCormick**, **G. D. Shipley** and **R. G. Ham.\***
160. Isolation and Characterization of Arylsulfatases A and B from Human Chondrocyte Cultures. **E. R. SCHWARTZ.\***
- 161.# Changes of Chromatin and Cytoplasmic Enzymes of Perinatal Rat Hepatocytes in Culture. **C. GUGUEN-GUILLOUZO\*** and **J. Kruh**.
162. Growth Characteristics In Vitro of Human Epithelial Cells Isolated from Foreskin. **G. E. MILO,\*** **A. G. Ackerman** and **I. Noyes**.
163. Effects of Polyamines on the Growth and Lifespan of Human Prostatic Epithelium In Vitro. **M. M. WEBBER\*** and **D. Chaproniere-Rickenberg**.
164. Long-Term Explant Culture of Normal Human Bladder. **H. SANEFUJI**, **B. M. Heatfield**, **B. F. Urso**, **L. A. Barrett\*** and **B. F. Trump**.
165. Cellular Orientation In Vitro Initiated by Particles. **C. G. BELLOWS**, **A. H. Melcher\*** and **D. M. Brunette.\***
166. "Dysplastic" Changes in Epithelial Cells Grown from Human Tissues. **D. J. MERCHANT.\***
167. Autoradiographic Evidence that Multinucleated Cells in Human Amniotic Fluid Cell Cultures Form by Fusion. **R. E. PRIEST**, **P. W. Snider**, **C. M. Kerrick** and **J. H. Priest.\***
168. Immunocytochemical Studies of Acid Maltase in Human Fibroblast and Muscle Cultures. **A. P. Hays**, **A. F. MIRANDA,\*** **M. Mehler** and **S. DiMauro**.
169. Alterations in Protein Synthesis and Creatinekinase in Muscle Cell Cultures Obtained From Dysrophic Chick Embryos. **V. IONASESCU,\*** **R. Ionasescu,\*** **P. Cancilla**, **D. Witte**, **R. Feld**, **L. Kaeding** and **L. Stern**.
- 170.# Actions of Ouabain on Proteins and RNA of Cultured Muscle Cells. **P. M. WEIDOFF, JR.,** **M. G. McNamee**, and **B. W. WILSON.\***
171. In Vitro Requirements for Neural Retina Ganglion Cell Axon Formation. **S. D. HAUSCHKA\*** and **M. OSE**.

#### SOMATIC CELL GENETICS, CYTOGENETICS, CELL CYCLE

172. In Vitro Selection of Metastatic Clones Resistant to Antibody Directed against Tumor Specific Antigen — In Vitro and In Vivo Characteristics of these Clones. **J. E. TALMADGE,\*** **J. R. Starkey**, **T. M. Landons** and **W. C. Davis**.
173. Expression of Enzyme Genes Trisomically and Tetrasomically Represented in Aneuploid Human Cancer Cells. **M. J. SICILIANO**, **S. Pathak\*** and **R. Cailleau.\***
174. New Methods for Selecting Reconstructed Cells. **J. W. SHAY\*** and **M. A. Clark**.
175. Somatic Cell Hybrids and Cybrids between Thymidine Sensitive and Resistant Chinese Hamster Cells. **J. MORROW\*** and **J. Shay**.
176. Inhibition of Polyethylene Glycol Induced Fusion of HEp2 Cells by Lectins. **V. S. C. FAN,\*** **G. T. Ealy** and **J. R. McCammon**.
177. An Immunochemical Screening of Hybrid Cell Colonies Expressing a Specific Human Gene. **N. SHIMIZU\*** and **Y. Shimizu**.
178. Laser Microirradiation of a Single Kinetochores in Mitotic PtK2 cells. **P. A. McNEILL** and **M. W. Berns.\***

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#Submitted for Honor B. Fell Award.

179. A Viable PTK2 Cell Clone Made Deficient in One Nucleolus by Selective Laser Microirradiation. K. Chong, M. Hammer-Wilson, A. Siemens and M. W. BERNIS.\*
180. C-Banding and Sister Chromatid Exchange in the Armenian Hamster Cell Line, AHL-1. K. S. LAVAPPA\* and D. Drabkowski.
181. A Unique Arrangement of Chromosomes: Cytogenetic Studies of Cultures from the North-eastern American Woodchuck. E. M. EARLEY,\* L. Jackson, D. Zarnowski and P. Gerber.
182. Chromosome Constitution of Clonal Derivatives Derived from Human Colon Carcinoma Lines COLO 320 and 321. C. CASARTELLI, F. E. Arrighi,\* T. C. Hsu and L. A. Quinn.
183. Gene Expression of Human Colon Adenocarcinoma Cell Lines and Clones. L. P. RUTZKY\* and M. Siciliano.
184. Ultrastructural and Karyologic Changes in SV40 Transformed Human Prostatic Epithelial Cell Lines. K. S. NARAYAN,\* Y. Ohnuki,\* M. S. Babcock and M. Marnell.

WEDNESDAY MORNING—June 13, 1979

Georgian

## SESSION IN DEPTH

**The Role of Activation Systems and Promoters in Mutagenesis and Carcinogenesis in Mammalian Cell Systems.***Conveners:* R. M. Nardone, Catholic University of America, Department of Biology, Washington, D.C.

J. W. Spalding, National Institute of Environmental Health Sciences, Research Triangle Park, N.C.

- 8:30 Introduction. J. W. SPALDING.\*
- 8:40 185. Induction of Anchorage Independence by Tumor-Promoting Phorbol Esters. N. H. COLBURN.
- 9:10 186. Effects of X-Irradiation, TPA and Protease Inhibitors on Malignant Transformation in Mouse 10T $\frac{1}{2}$  Cells. A. R. KENNEDY, H. Nagasawa and J. B. Little.
- 9:40 187. In Vitro Metabolic Activation of Chemical Carcinogens to Mutagens and its Relationship to Cancer Induction In Vivo. D. BRUSICK.
- 10:10 Coffee Break
- 10:25 188. Application of In Vitro Transformation and Metabolism to the Study of Cocarcinogenesis. S. NESNOW and S. Leavitt.
- 10:55 189.† Inhibition of Metabolic Cooperation in Mammalian Tissue Culture Cells by Phorbol Myristate Acetate. L. P. YOTTI and J. E. Trosko.
- 11:10 190. Liver and Lung Cell-Mediated Mutagenesis of V79 Cells With Chemical Carcinogens. R. LANGENBACH,\* A. Tompa, C. Kuszynsky,\* S. Kennedy and E. Huberman.
- 11:25 191. The Use of Adult Hamster Hepatocytes and Hamster Embryo Cells to Metabolize Carcinogens in the Ames Mutagenesis Assay. R. RAINERI,\* J. A. Poiley,\* R. J. Pienta\* and A. W. Andrews.
- 11:40 192. Induction of Sister Chromatid Exchanges (SCE) in Human Leukocytes by Cyclic Nitroso-Compounds. T. HO,\* S. C. Tipton and J. L. Epler.

WEDNESDAY MORNING, June 13, 1979

Williamsburg

## SESSION IN DEPTH

**Clonal Propagation of Trees.***Convener:* Z. Wochok, Plant Resources Institute, University Research Park, Salt Lake City, Utah

- 8:30 193. Morphogenesis in Suspension Cultures of Conifers. D. J. DURZAN, D. Einspahr, M. A. Johnson and D. Verma.\*
- 9:00 194. Genetic Heterogeneity of In Vitro Shoot Initiation in Conifers. M. M. ABO EL-NIL.
- 9:30 195. Propagation In Vitro of Apple and Other Woody Fruit Plants. O. P. JONES and D. J. James.

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†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

- 10:15 Coffee Break  
 10:30 196. Morphogenesis of Palms In Vitro. J. F. REYNOLDS.  
 11:15 197. Rejuvenating Adult Tissues for Clonal Multiplication. A. FRANCLLET.

## WEDNESDAY MORNING—June 13, 1979

Pacific-Evergreen

## SESSION IN DEPTH

## Progress and Prospects in Invertebrate Tissue Culture.

*Conveners:* I. Schneider, Walter Reed Army Institute of Research, Department of Entomology, Washington, D.C.

S. Sohi, Insect Pathology Research Institute, Sault Ste Marie, Ontario, Canada

- 8:30 198. Hormonal Regulation of Cuticle Synthesis by *Manduca* Epidermis In Vitro. L. M. RIDDI-FORD.  
 9:00 199. Ecdysteroid Action in the Development of Imaginal Discs. J. W. FRISTROM, C. Chihara, D. Kimbrell, R. Hill, E. Pashelinsky, D. Silvert and M. A. Yund.  
 9:30 200. Morphogenesis in Embryonic *Drosophila* Cell Lines Exposed to  $\beta$ -Ecdysone. E. BERGER.  
 10:00 Coffee Break  
 10:15 201. In Vitro Cultivation of Schistosomes. P. F. BASCH.  
 10:45 202. In Vitro Culture of the Sporogonic Forms of a Malarial Parasite. M. C. ROSALES-SHARP.  
 11:15 203. Replication of an Insect Baculovirus in Five Lepidopteran Cell Lines. D. E. LYNN\* and W. F. Hink.\*  
 To be followed by Invertebrate Division Business Meeting.

## WEDNESDAY MORNING—June 13, 1979

Rex

## Contributed Papers: Nerve Cells.

*Conveners:* M. N. Goldstein

B. Juurlink

- 8:30 204. Astrocyte Cell Lineage in Tissue Culture. S. FEDOROFF,\* C. Hall, F. Oteruelo and B. Juurlink.  
 8:45 205. Myelin-Deficient Mutant Mice: Comparative Culture Studies of Quaking, Jimpy and MSD. M. K. WOLF\* and S. Billings-Gagliardi.  
 9:00 206. In Vitro Chemical Transformation of Fetal Mouse Brain Cells. P. MARKOVITS,\* B. Coulomb, S. Levy, D. Papadopoulo and R. Maunoury.  
 9:15 207. Effects of High Serum Levels, Dibutyryl Cyclic AMP and Hydrocortisone on Glutamine Synthetase Activity in Primary Mouse Astroglial Cultures. B. H. J. JUURLINK, L. Hertz and S. Fedoroff.\*  
 9:30 Coffee Break  
 9:45 208. Induction of  $\gamma$ -Glutamyl Transpeptidase in Brain Capillary Endothelial Cells Co-Cultured With Glial Cells. L. E. DE BAULT\* and P. A. Cancilla.  
 10:00 209. Liposomes Enhance the NGF Action of Chick Sympathetic Nerve Cells In Vitro. J. S. CHEN,\* M. Basa, A. Di Luzio and M. G. Menesini.  
 10:15 210. Transsynaptic Regulation of Phosphatidylcholine and Phosphatidylinositol Metabolism in Cerebral Cortex Cultures — An Approach to the Molecular Mechanism. M. GIESING\* and K. Tischner.\*  
 10:30 211.† Insulin — Is it a Nerve Growth Factor? E. Y. SNYDER and S. U. Kim.\*  
 10:45 212. Growth and Differentiation of Cells From the Sensory Ganglia in Serum-Albumin-Free-Culture Medium. S. H. HAMADA,\* R. Mastrangelo and P. Paganussi.

## WEDNESDAY MORNING—June 13, 1979

Colonial

## Contributed Papers: Establishment of Cell Cultures.

*Conveners:* T. I. Malinin

L. Rutzky

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (\*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

- 8:30 213. Use of Pepsin to Subculture and Purify Mouse Normal Mammary Epithelial Cells. M. E. BORDELON-RISER,\* B. Clark and D. Medina.
- 8:45 214. Growth of Epithelial Cells From Rat Pleura. J. F. ARONSON and V. J. Cristofalo.\*
- 9:00 215. Isolation and Culture of Proliferative Cells From the Rat Colon. K. Y. YEH and D. P. Chopra.\*
- 9:15 216. Concentration of Rabbit Tracheal Epithelial Cells by Isopycnic and Velocity Sedimentation. K. S. SONSTEGARD\* and E. Cutz.
- 9:30 217. Long Term Culture of Epithelial-Like Cells From the Liver of Adult Woodchucks. P. GERBER.
- 9:45 Coffee Break
- 10:00 218. Derivation of Adult Venous Endothelium. W. E. BURKEL, J. W. Ford and R. H. Kahn.\*
- 10:15 219. Isolation of Bovine Pancreatic Duct Cells by Digestion. R. T. JONES,\* T. Sato, M. C. Lakshmanan and G. D. Stoner.\*
- 10:30 220. Pseudo-Islet Formation and Culture From Canine Isolated Pancreatic Cells. D. W. SCHARP,\* R. C. Merrell,\* M. M. Feldmeier,\* R. Downing and W. F. Ballinger.
- 10:45 221. An In Vitro and In Vivo Nonhuman Primate Model of Prostate Disease. M. B. KAACK and R. W. Lewis.\*
- 11:00 222. Fish Cell Lines: Establishment of the First Suspension Culture. B. C. LIDGERDING\* and C. L. Schultz.\*
- 11:15 223. Establishment of Cell Lines From the Tissues of the Atlantic Menhaden. E. B. STEPHENS\* and F. M. Hetrick.\*

## WEDNESDAY AFTERNOON—June 13, 1979

Georgian

- 12:30 Annual Business Meeting of the TCA.  
All Members Are Encouraged to Attend.

## WEDNESDAY EVENING—June 13, 1979 8-10 p.m.

## ROUND TABLES

## Plant Division

Williamsburg

## Plant Propagation Topics.

*Conveners:* R. Makino  
R. H. Smith

## Secondary Products In Vitro.

*Conveners:* D. K. Dougall  
R. Lawrence

## Genetic Engineering.

*Conveners:* G. Schaeffer  
P. M. Hasegawa

## Problems of Disinfestation.

*Conveners:* A. Donnan  
P. Hasforth

(Preceded by Plant Division Business Meeting at 7:30 p.m.)

## Cell Fusion and Cell Hybridization.

Pacific/Evergreen

*Convener:* H. Hoehn

Media Standardization Computer Banking for Formulae  
of Tissue Culture Media.

Rex

*Conveners:* R. H. Kahn  
R. G. Ham  
R. T. Dell'Orco

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†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

**Committee for Standardization, Collection and  
Distribution of Cells and Tissues In Vitro. Colonial**

**Standards for Cell and Tumor Laboratories.**

*Conveners:* R. E. Stevenson  
L. Coriell

**Committee for Carcinogenesis, Mutagenesis and Toxicity Testing. Georgian**

**In Vitro Toxicity Testing — State-of-the-Art**

*Conveners:* J. J. Berky  
B. Casto

**THURSDAY MORNING—June 14, 1979**

**Williamsburg**

**SESSION IN DEPTH**

**Investigations With Plant Protoplasts.**

*Convener:* H. Uchimiya, Union Carbide, Tarrytown Technical Center, Tarrytown, N. Y.

- 8:30 224. Somatic Hybrid Plants of Potato and Tomato and Protoplast Fusion in Potato Breeding. **G. MELCHERS.**
- 9:30 225. Isolated Protoplasts as a Model System for Research on Membrane Transport in Plants. **R. T. LEONARD.**
- 10:15 Coffee Break
- 10:30 226. Production and Analysis of Protoplasts with Hybrid Cytoplasm. **H. T. BONNETT.**
- 11:15 227. Ultrastructure of Plant Protoplasts. **L. C. FOWKE.**

**THURSDAY MORNING—June 14, 1979**

**Georgian**

**SESSION IN DEPTH**

**Selective Uptake and Fate of Biologically Active Molecules.**

*Convener:* R. G. W. Anderson, University of Texas, Department of Cell Biology, Dallas, Texas

- 8:30 228. Carrier Functions of Poly(Lysine) in Drug Transport: A New Approach to Overcome Drug Resistance. **W.-C. Shen and H. J.-P. RYSER.**
- 9:00 229. Uptake of Alpha Macroglobulin Protease Complexes by Alveolar Macrophages. **J. KAPLAN.**
- 9:30 230. Direct Visualization of the Binding and Internalization of Epidermal Growth Factor. **H. T. HAIGLER.**
- 10:00 Coffee Break
- 10:15 231. Immunocytochemical Studies of Coated Regions of Cell Surface Membrane. **R. G. W. ANDERSON.**
- 10:45 232. Effects of Epidermal Growth Factor (EGF) and Other Potential Mitogens on <sup>3</sup>H-Thymidine Incorporation by Pancreatic Acinar Epithelia in Culture. **R. J. HAY and N. W. Jessop.**

**THURSDAY MORNING—June 14, 1979**

**Regents**

**Contributed Papers: Mutagen/Carcinogen Metabolism**

*Conveners:* B. C. Casto  
M. D. Waters

- 8:30 233. Retinoid Inhibition of Carcinogen-Induced Transformation in Cryopreserved Golden Syrian Hamster Embryo Cells. **K. A. TRAU,\* U. Nanna, J. S. Wolff and K. E. Jensen.**
- 8:45 234. Metabolic Activation of Carcinogens by X-Irradiated and Non-Irradiated Syrian Hamster Embryo Cells. **J. DOOLEY, S. Soukup,\* D. Warshawsky and R. Christian.\***
- 9:00 235. Benzo(a)pyrene Metabolism and Binding in Type II Alveolar Cells Clonally Derived from Adult Rat Lung. **R. W. TEEL\* and W. H. J. Douglas.\***

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (\*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

- 9:15 236. Correlation Between Benzo(a)pyrene (BP)-Induced Transformation of Hamster Embryo Cells, and Inducible Aryl Hydrocarbon Hydroxylase (AHH) and Epoxide Hydrase (EH). J. A. POILEY,\* R. Raineri\* and R. J. Pienta.\*
- 9:30 237. Tracheal Ring Cultures Used for the Evaluation of Oncogenic Activity of Polycyclic Aromatic Hydrocarbons. N. N. BEALES,\* Y. E. Rahman and C. Peraino.
- 9:45 238. In Vitro Assay for Immunosuppressive Activity of Environmental Toxicants. M. A. THOMSON, H. J. Svec and L. Y. Quinn.\*
- 10:00 Coffee Break
- 10:15 239. Photoaffinity Label Derivatives of Fluorene as Probes in In Vitro Carcinogenesis. W. E. WHITE, JR., A. M. Sarraf\* and S. C. Hixon.
- 10:30 240. Toxicologic Evaluation of Food Additive With Rat Renal Cultures. R. C. BRAUNBERG and O. O. Gantt.
- 10:45 241. Toxicity of Methylmercuric Hydroxide and Colchicine on Cultured Mouse Neuroblastoma. R. L. KOERKER.\*
- 11:00 242. Increased Mutation Frequency Due to Ethylene Oxide Adsorbed to Plastics. A. M. BROWN,\* C. Bruch, E. Jacobson, K. Krell, B. Page and M. Thomas.
- 11:15 243. Does Ethanol Induce Chromosome Damage? W. AU\* and F. M. Badr.\*

## THURSDAY MORNING—June 14, 1979

Colonial

## FILM SESSION

*Convener and Commentator:* W. H. J. DOUGLAS

- 8:30 244. Fetal Mouse Lungs in Circumfusion System Tissue Cultures.\*  
G. G. Rose, color, silent, 25 minutes.
- 9:00 245. The HeLa Cell Strain.\*  
C. M. Pomerat, b&w, sound, 11 minutes.
- 9:15 246. Chromosome Banding Techniques.  
National Foundation's Medical Genetics Series, color, sound, 18 minutes.
- 9:40 Coffee Break
- 10:00 247. Lysis and Phagocytosis of Antibody-Sensitized Chicken Red Cells by P388D<sub>1</sub> Mouse Macrophage Tumor Cells.\*  
H. S. Koren, W. P. Morgan and C. J. Dawe, b&w, sound, 4 minutes
- AND
248. Organ Culture of Cockroach Tissues.\*  
E. Marks, color, sound, 11 minutes.
- 10:20 249. Interaction Between Embryonic Tissues in Culture.  
E. J. Sanders and R. Bellairs, b&w, silent, 20 minutes. Commentary presented by E. J. SANDERS.

\*From the film collection of the AJCSC, available for rent.

## THURSDAY AFTERNOON—June 14, 1979

Olympic Bowl

## POSTER SESSION III

Posters will be on display from 10:00 a.m. to 5:00 p.m.

Odd Numbered Posters will be attended by the Author(s) . . . . . 1:30 - 3:00 p.m.

Even Numbers . . . . . 3:00 - 4:30 p.m.

## HORMONES AND GROWTH FACTORS

250. Hormone Requirements for DMBA-Induced Alterations of RNA Synthesis in Rat Mammary Epithelial Cells in Culture. A. B. DEANGELO,\* M. L. Stewart and D. H. Janss.\*
251. Effects of a Protein Growth Factor Present in the Retina on Cells from Different Origins and Species. D. BARRITAU, C. Arruti and Y. Courtois.\*
252. Effects of Culture Media and FGF on Bovine Endothelial Cell Growth. G. S. DUTHU and J. R. Smith.\*

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†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.

253. Demonstration of a Glucocorticoid Receptor in Primary Mammary Epithelial Cell Cultures. **L. B. MALAN-SHIBLEY,\*** **A. B. DeAngelo\*** and **D. H. Janss.\***
254. In Vitro Growth of T Lymphocyte Colonies Requires Accessory Cells. **D. A. CLARK.\***
255. The Isolation and Properties of an Epithelial Cell Strain from Rhesus Monkey Bronchus. **J. L. CAPUTO,** **R. J. Hay\*** and **C. D. Williams.\***
256. Effects of a Choline Inhibitor on Mammalian Cell Growth. **L. S. BORMAN,\*** **D. O. Johnson** and **F. Snyder.**

#### NEOPLASIA AND VIROLOGY

257. Poikilotherm Vertebrate Cell Lines and Viruses: A Current Listing for Fishes—1978. **K. WOLF\*** and **J. A. Mann.**
258. A New Screening Procedure for Carcinogenic Agents. **S. H. H. SWIERENGA,\*** **A. L. Boynton** and **J. F. Whitfield.\***
259. Measurement of the Transformation/Mutation Ratio in BALB/3T3 Cells. **D. R. LANG.\***
260. Transformation of BALB/3T3 Cells by Residue Organics from Drinking Water. **H. KUR-ZEPA,\*** **M. S. Cole** and **D. R. Lang.\***
261. Decreased Loss of N<sup>7</sup>-Methylguanine and O<sup>6</sup>-Methylguanine During the S Phase in Synchronized 10T<sup>1/2</sup> Cells. **G. J. SMITH,** **D. G. Kaufman** and **J. W. Crisham.\***
262. Survival of Human Lymphoblastoid Cells Measured by Growth in Microtitre Wells. **H. L. WATERS** and **K. H. Kraemer.**
263. A Rapid Bioassay for Detecting Murine Leukemogenesis by Cellular gp71 Binding. **C. D. REED,\*** **A. K. Fowler** and **A. Hellman.**
264. Production of Fibronectin (Lets Protein) by Human Epithelial Cells in Culture. **H. S. SMITH,\*** **J. L. Riggs** and **M. W. Mosesson.**
265. Plasminogen Activator(s) of Normal and Tumor-Derived Human Cells: A Comparison of Enzyme Levels, Molecular Characteristics and Dexamethasone Regulation. **P. L. YOUNG\*** and **R. O. Roblin.**
266. Differential Effect of Phorbol Esters on the Growth Rate of Normal Human Epithelial and Fibroblastic Cells. **J. F. LECHNER** and **M. E. Kaighn.\***
267. The Nuclear-Cytoplasmic Ratio to Distinguish Malignant From Nonmalignant Human Mammary Epithelial Cells in Mixed Culture. **G. C. BUEHRING.\***
268. Isopeptide and Transglutaminase Differentials Between Normal and Virus Transformed Human Lung Fibroblasts. **P. J. BIRCKBICHLER,\*** **E. Conway,** **M. K. Patterson, Jr.,\*** **G. R. Orr** and **H. A. Carter.**
269. Biotransformation Reactions in Normal and Neoplastic Hepatocytes Attached to Microcarrier Beads. **J. HUOT,\*** **M. Couillard,** **H. Guderley,** **D. Gagnon** and **S. Heisler.**
270. Sustained Growth and 3-Dimensional Organization of Primary Culture of Normal and Neoplastic Mammary Cells in Embedded Collagen Gels. **J. YANG,** **P. Bowman,\*** **J. Richards,\*** **R. Guzman,** **J. Enami,\*** **K. McCormick,** **S. Hamamoto,** **D. Pitelka\*** and **S. Nandi.\***
271. Rat Mammary Epithelium and Carcinogen-Induced Mammary Adenocarcinoma in Long-Term Culture. **A. H. POTTER,\*** **D. Malejka-Giganti** and **R. E. Rydell.**
272. Variation of Tumor Antigen Expression Related to Time in Culture. **C. FEIT,** **Y. Hirshaut,\*** **D. Pei** and **J. Tauber.**
273. Analysis of a Multisequential Transformation in a Pig Cell Line (PFT). **A. M. P. BOUIL-LANT,\*** **P. Genest** and **A. S. Greig.\***
274. Properties of 14 Week Maintenance Cultures of PLC/PRF/5 Cells. **P. B. JOHNSTON,\*** **E. Espinosa,** **S. Chia** and **S. Caple.**
275. Malignant Transformation of Murine Fibroblasts Propagated From a Human Cervical Squamous Cancer Xenografted in Nude Mice. **R. A. PAVIA\*** and **D. M. Goldenberg.\***
276. Altered Properties of Human Prostatic Epithelial Cells Transformed by SV40 Virus. **J. F. Lechner** and **M. E. KAIGHN.\***
277. Scanning Electron Microscopic Observations on Influenza Virus-Infected Porcine Lung. **E. C. PIRTLE\*** and **J. E. Gallagher.**

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (\*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for Honor B. Fell Award.



278. **Aggregates of Intermediate Type Filaments in Carcinogen-Induced Cytoplasmic Lesions in Rat Liver Cells.** E. **BORENFREUND\*** and P. J. Higgins.
279. **Quantitative Ultrastructure of the Cytoplasmic Organelles of Human Carcinoma and Non-Malignant Epithelial Cell Lines.** E. L. **SPRINGER,\*** H. S. Smith\* and A. J. Hackett.\*
280. **Development of Occludens Junctions (OJ) in Rat Bladder Carcinoma Cells.** B. U. **PAULI\*** and R. S. Weinstein.
281. **Tritiated Deoxypyrimidine Suicide of Mouse Colony Forming Cells.** E. M. **UYEKI.\***
282. **Water NMR Relaxation Times of Mitotic and Interphase Chinese Hamster Ovary Cells.** P. T. **BEALL\*** and D. Robinson.

**THURSDAY AFTERNOON—June 14, 1979 1:30 - 3:30 p.m.**

**ROUND TABLES**

- The Influence of Cell Shape on Growth and Differentiation.** **Williamsburg**  
*Conveners:* D. R. Pitelka  
 J. Folkman
- Characterization of Cells by Chromosomes and Isozyme Markers.** **Pacific/Evergreen**  
*Conveners:* R. Cailleau  
 S. Pathak  
 M. Siciliano
- Honor B. Fell Division** **Rex**
- Tracheobronchial Explants for Studies of Human Carcinogenesis and Neoplasia.**  
*Convener:* L. J. Schiff
- Materials and Supplies Committee** **Colonial**
- Laboratory Safety: Equipment Available and Instructions for Proper Usage.**  
*Convener:* E. M. Earley
- Aging** **Georgian**  
*Conveners:* R. T. Dell'Orco  
 T. Norwood

**READ BY TITLE**

283. **Characterization of Human Melanoma and Pancreatic Carcinoma Cultures.** B. P. Barna,\*  
 B. **JACOBS**, M. S. Kumar and S. D. Deodhar.\*
284. **Lymphocyte Blast Transformation in Disease and the Effects of Biochemical Modification.**  
 A. B. **GLASSMAN\*** and C. E. Bennett.\*
285. **The Activity of Adenyl Cyclase in Somatic Hybrid Cells.** S. R. **KUVIBIDILA** and C. E. Kimble.\*
286. **Transport of Asbestos in Cultured Tomato Root Tips.** R. J. **RISNER\*** and W. R. Sharp.\*
287. **Blood Serum Factors Influencing Endothelial Cell Adhesion.** E. R. **ROUX**, A. R. Wechezak,\* A. K. Burrows and P. B. Mansfield.

Numbers preceding titles refer to abstracts.

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