

CURRICULUM VITAE

updated 9/03

Diane A. Blake, Ph.D.

ADDRESS:

Business

Department of Ophthalmology
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Home

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PERSONAL INFORMATION:

Born: February 4, 1950, Dayton, OH
Married: Robert C. Blake, II, 1972
Children: Son, (Robert) 1982; Daughter (Elizabeth), 1984

EDUCATION:

B.S. in Biochemistry, 1972, Ohio State University, Columbus, Ohio
Ph.D. in Biochemistry, 1977, University of Illinois, Urbana-Champaign, Illinois
Thesis Director: H.E. Conrad
Thesis Title: "Structural Microheterogeneity in the Dermatan Sulfate Synthesized by Arterial Chick Embryo Fibroblasts"

PROFESSIONAL APPOINTMENTS:

July 2003 –

Full Professor, Department of Ophthalmology, Tulane University Health Sciences Center, New Orleans, LA (Adjunct appointment in Department of Biochemistry)

August, 1993- June, 2003

Associate Professor (tenured 1999), Department of Ophthalmology, Tulane University Health Sciences Center, New Orleans, LA (Adjunct appointment in Department of Biochemistry)

April, 2002- present

Member, Graduate Faculty, Tulane University

1984-1993

Assistant Professor, Department of Biochemistry
Meharry Medical College, Nashville, TN

RESEARCH INTERESTS, continued:

Isolation and characterization of antibodies to metal-chelate complexes, construction and validation of immunoassays that assess environmental metal ion contamination, antibody structure/function relationships, design and binding properties of recombinant antibodies, design and validation of immunosensors for use in environmental analysis.

RESEARCH GRANTS:

(DC, direct costs; IC, indirect costs available to Diane A. Blake)

Present Research Funding

| | |
|-----------|---|
| 9/02-9/04 | R03 CA099513-01, NIH/NCI Cadmium, K-ras, and pancreatic cancer in Egypt \$151,000 total costs Amr Soliman, PI at M.D. Anderson Cancer Center \$22,275 to D.A. Blake, PI of Tulane Consortium |
| 9/02-9/04 | DE-FG02-ER63459, Department of Energy, NABIR Program In-line uranium immunosensor \$315,792 (DC), \$92,534 (IC), D.A. Blake, PI |
| 7/02-6/04 | 02HQAG0108, USGS Cooperative Agreement Water quality sensing with a species-specific IgA biosensor Diane A. Blake, PI \$157,975 (DC), \$69,275 (IDC) D.A. Blake, PI |
| 1/02-8/04 | ORNL Subcontract No. 34000016954, Department of Energy Bio-COM sensors for real-time characterization for D&D applications, Thomas Thundat, PI at Oak Ridge National Laboratories \$66,667 (DC), \$32,333 (IDC) to D.A. Blake, PI of Subcontract |
| 9/01-9/04 | DE-FG02-98ER62074, Department of Energy, NABIR Program Field-portable immunosensors and reagents for hexavalent uranium, other metal contaminants, and chelators (competitive renewal) \$561,487 (DC), \$226,956 (IC) D.A. Blake, PI |
| 9/02-6/04 | DE-FC25-00NT4083, Department of Energy Rapid, antibody-based detection of mercury and methylmercury \$131,325 (DC), \$63,693 (IC) D.A. Blake, PI |

Past Research Funding at Meharry Medical College

- 8/85-7/86 DMB-850577, National Science Foundation
Acquisition of an ultracentrifuge and rotors
\$54,000 (DC), D.A. Blake, Co-PI
- 10/85-9/88 DCB-8508531, National Science Foundation
Role of glycoconjugates in cell-substratum interactions
\$146,000 (DC+IC), D.A. Blake, PI
- 10/85-9/90 1K14-HLO-1709, NIHLB, National Institutes of Health
Minority School Faculty Development Award
\$315,170 (DC+IC), D.A. Blake, PI
- 8/86-7/89 RIMI-8604330, National Science Foundation
Transmembrane signaling: Relationship of altered cell-surface
components to metabolic activation
\$297,996 (DC+IC), D.A. Blake, Co-PI
- 12/89-11/90 DCB-8811307, National Science Foundation
Role of glycoconjugates in cell-substratum interactions (competitive
renewal of DCB-8508531)
\$118,000 (DC+IC), D.A. Blake, PI
- 9/87-8/91 NIH-MBRS-S06 RR087037-16A1, National Institutes of Health
Development and expansion of biomedical sciences
\$65,680 (DC+IC), D.A. Blake, Associate Investigator
- 10/90-8/93 R-816393-01-0, U.S. Environmental Protection Agency
Quantitation of heavy metals by immunoassay
\$313,225 (DC+IC), D.A. Blake, PI
- 10/90-8/93 28167-LS-SAH, U.S. Army Laboratory Command
Role of proteoglycans in cellular signaling
\$294,228 (DC+IC), D.A. Blake, PI
- 4/91-8/93 R01 EY09092, National Institutes of Health
An in vitro model of corneal wound healing: Role of matrix
\$229,328 (DC+IC), D.A. Blake, PI
- 10/92-9/97 HRD-9255157, National Science Foundation Center of Excellence
(resigned 8/93) Subproject title: Glycolipid-anchored proteoglycans in endothelial cells
\$4,975,000 (\$386,860 for subproject), D.A. Blake, PI of subproject

Past Research Funding at Meharry Medical College, continued

10/92-9/95
(resigned 8/93) P20 DE10595, National Institutes of Health, NIDDR
Subproject title: Proteoglycan mediators of the wound healing response
\$949,465 (\$185,058 for subproject), D.A. Blake, PI of subproject

Past Research Funding at Tulane University Health Sciences Center

8/93-3/94 R01 EY09092, National Institutes of Health, NEI
An in vitro model of corneal wound healing: Role of matrix
\$116,420 (DC), \$43,210 (IC), D.A. Blake, PI

9/94-4/97 R55-EY09092, National Institutes of Health, NEI
An in vitro model of corneal Wound healing: Role of matrix
\$80,000 (DC), \$20,000 (IC), D.A. Blake, PI

3/95-1/98 DE-FG01-93ER53023 DOE/OTT, Department of Energy
A sensitive, rapid on-site immunoassay for heavy metal
contamination,
\$144,310 (DC), \$72,993 (IC), D.A. Blake, Co-PI of Cluster Project

7/95-6/97 DoD/CBR Bioenvironmental Hazards Research Project, Depart. Defense
Detection, speciation, and bioremediation of uranium wastes,
\$72,160 (DC), \$36,802 (IC), D.A. Blake, Co-PI of Cluster Project

9/95-3/99 R 82402429 U.S. Environmental Protection Agency
Quantitation of heavy metals by immunoassay
\$255,967 (DC) \$125,953 (IC), D.A. Blake, PI

7/96-6/97 93-DNA-2 DoD/CBR Bioenvironmental Hazards Research Project;
Recombinant antibodies for environmental analysis,
\$26,797 (DC) \$13,666 (IC) D.A. Blake, PI

6/97-1/98 Protocol 97-01-ORL, Alcon Laboratories Inc.
The effect of skirt material composition on the in vivo stability of a
flexible keratoprosthesis
\$ 37,373 (DC) \$7,475 (IC) D.A. Blake, Co-PI

7/96-6/01 F31 EY06755 NIH/NEI
Minority Predoctoral Fellowship for Tiera S. Coston
\$68,508 (DC), (no IC) D.A. Blake, sponsor

7/97-9/00 DoD/DTRA 01-96-1-0004
DoD/CBR Receptor-Based Hazard Monitoring Research Project,
Antibody reagents for receptor-based biosensors,
\$149,151 (DC) \$71,369 (IC) D.A. Blake, PI

Past Research Funding at Tulane University School of Medicine, continued

- 5/98-7/00 DoD/DWSA 01-97-1-0028
DoD/CBR Bioenvironmental Hazards Research Program
Immunoassays to speciate and quantify uranium and
related radionuclide wastes
\$110,581 (DC) \$47,605 (IC) D.A. Blake, Co-PI of Cluster Project
- 5/98-7/00 DoD/DWSA 01-97-1-0028;
CBR Bioenvironmental Hazards Research Program
Recombinant antibodies for environmental analysis,
\$64,395 (DC) \$25,673 (IC) D.A. Blake, PI
- 4/99-8/00 DoD/DTRA 01-98-1-0012, Department of Defense
CBR Bioenvironmental Hazards Research Program
Lead immunosensors: Optimization and validation
\$74,074(DC) \$35,926 (IC) D.A. Blake, PI
- 9/98-9/01 DE-FG02-98ER620704, Department of Energy, NABIR Program
Field portable immunoassays instruments and reagents to measure
chelators and mobile forms of uranium,
\$535,546 (DC) \$148,199 (IC) D.A. Blake, PI
- 9/00-9/02 DE-FC25-00NT4083, Department of Energy
Naval Research Laboratory Subcontract
\$37,875 (DC) \$12,125 (IC) D.A. Blake, Contract Administrator
- 8/99-4/02 N00014-99-1-0763, Office of Naval Research
CBR Bioenvironmental Hazards Research Program
Antibody-based biosensors for AUV's
\$103,890 (DC), \$45,537 (IC), D.A. Blake, PI
- 7/00-10/02 DHHS/CDC-R04/CCR419466-01, Center for Disease Control
Molecular approaches for the evaluation of cadmium toxicity
\$107,077 (DC), \$19,923 (IC), D.A. Blake, PI

INVITED SEMINARS, SYMPOSIA, AND WORKSHOPS:

Nanjing Agricultural University, Nanjing, People's Republic of China, October 25, 2003.
Invited Seminar: Antibodies to Metal-Chelate Complexes: Basic Science and Biotechnology
Workshop: Isolation and Characterization of Antibodies to Metal-Chelate Complexes

Chinese Academy of Agricultural Science, Beijing, People's Republic of China, October 23,
2003.

Invited Seminar: Immunoassays for Heavy Metals: Applications for Environmental Analysis

INVITED SEMINARS, SYMPOSIA, AND WORKSHOPS, continued:

e.hormone 2003: The Cutting Edge of Endocrine Disruptor Research, New Orleans, LA, October 16-18, 2003.

Platform Presentation: Antibody-based Biosensors for Heavy Metals

Symposium on Bioterrorism: Targeting Chemical and Biological Warfare Agents, 226th ACS National Meeting, New York, NY, September 9-11, 2003.

Platform Presentation: Hand-held Immunosensor for Detection of Chemical and Biological Agents

Symposium on Biotechnology, 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.

Platform Presentation: Immunoassay for serum cadmium: A new tool to assess risk for pancreatic cancer

Symposium on Analytical Chemistry in Nuclear Technology, 223rd ACS National Meeting, Orlando FL, April 7-11, 2002.

Platform Presentation: "Antibody-based sensors for hexavalent uranium"

Environmental Stewardship: Promising Solutions to Uncertainty, A DOE-sponsored Symposium on Monitoring, Risk Assessment, and Information Sciences. New Orleans, LA, Feb. 5-7, 2002.

Platform Presentation: "Biosensors for real-time monitoring"

Beijing Vegetable Research Center, Beijing, China, October 14-26, 2001.

Visiting Research Professor to initiate a collaborative project for the development of antibody-based approaches for the measurement of heavy metals in plant tissues and extracts

Research Seminar: "Antibodies to metal-chelate: Basic science links to biotechnology"

Environmental Immunochemistry Summit IX, San Diego, CA, April 1-5, 2001.

Platform Presentation: "Determination of cadmium in human serum by a one-step sensitive immunoassay".

Dow Chemical Company, Freeport, TX, February 11-12, 2001.

Research Seminar: "Monoclonal antibodies and the metal-chelates they love: Basic science links to biotechnology"

52nd Southeast-56th Southwest Combined ACS Meeting, New Orleans, LA December 6-8, 2000. Symposium on Supramolecular Chemistry in Biology, Medicine, and the Environment

Platform Presentation: "Probing the nature of the binding interactions between metal-chelate complexes and metal-specific monoclonal antibodies"

Environmental Immunochemistry Summit VIII, San Francisco, CA, March 29-30, 2000.

Platform Presentation: "Antibodies and antibody-based immunosensors for hexavalent uranium"

INVITED SEMINARS, SYMPOSIA, AND WORKSHOPS, continued:

American Association of Ocular Pathologists/International Society of Ocular Pathologists, New Orleans, LA, November 6-7, 1998

Platform Presentation: Corneal endothelial toxicity of 5-fluoruracil and mitomycin c: A method for in vitro assessment

Southeastern Louisiana University, Hammond, LA, September 18, 1998

Research Seminar: "Analysis of heavy metals in environmental samples using antibodies that recognize metal-chelate complexes"

Chinese National Environmental Protection Agency, Beijing, China, August 28, 1998.

Research Seminar: "Isolation and characterization of antibodies for heavy metal analysis"

Provincial Environmental Protection Agency, Shandong Province, China, August 18-22, 1998.

Workshop: Analysis of water samples for cadmium contamination using a field-portable immunoassay

Research Seminar: "Environmental immunoassays: Overview for applications in China"

Analytica Conference 98, Munich, Germany, April 24-28, 1998.

Symposium Speaker: "Analysis of heavy metals using antibodies that recognize metal-chelate complexes"

ORNL/DOE 37th Conference on Analytical Chemistry in Energy Technology, Gatlinburg, TN, October 7-9, 1997, Chair, Field Analysis Section

Platform Presentation: "Assay of heavy metals using antibodies to metal chelate complexes"

Environmental Immunochemistry Summit VI, a symposium of the 214th National Meeting of the American Chemical Society, Las Vegas, NV, September 8-9, 1997

Platform Presentation: "Isolation and characterization of an antibody directed towards Pb(II)-chelate complexes"

First International Biometals Symposium, Calgary, Alberta, Canada, August 10-14, 1997

Platform Presentation: "Generation and properties of metal-specific monoclonal antibodies"

University of Alabama at Birmingham, Vision Science Research Center, March 21, 1997

Research Seminar: "Beyond the plasma membrane: Signals from the extracellular matrix synthesized by the corneal endothelium"

Environmental Immunochemistry Summit V and First National Conference on Immunochemistry, U.S. EPA, Assn. State and Territorial Public Health Laboratory Directors, NIEHS, and FDA, August 13-15, Las Vegas, NV, 1996

Platform Presentation: "Determination of antibody affinity and specificity"

INVITED SEMINARS, SYMPOSIA, AND WORKSHOPS, continued:

Development and Application of Immunoassays for Environmental Analysis, a symposium of the 211th Annual Meeting of the American Chemical Society, New Orleans, LA, March 24-28, 1996
Platform Presentation: "Characterization of a metal-specific monoclonal antibody"

Environmental Immunochemistry Summit IV, U.S. EPA, August 2-3, Las Vegas, NV, 1995
Platform Presentation: "Isolation and characterization of metal-specific monoclonal antibodies"

Water Environment Federation Specialty Conference, Environmental Laboratories: Testing the Waters, Cincinnati, OH Aug. 13-16, 1995
Platform Presentation: "Measurement of heavy metals in waste water by immunoassay"

Environmental Immunochemistry Summit III, U.S. EPA, August 6-8, Las Vegas, NV, 1994
Platform Presentation: "An immunoassay for heavy metals using antibodies to metal chelate complexes"

17th Annual EPA Conference on Pollutants in the Environment, Norfolk, VA, May 3-5, 1994
Platform Presentation: "Enzyme immunoassay to determine heavy metals using antibodies to specific metal-EDTA complexes"

INTERNAL SEMINARS (past 3 years):

Women's Center Research Seminar Series, September 18, 2000.
"Monoclonal antibodies and the metal-chelates they love: Basic science links to biotechnology"

Department of Medicine Research Conference, October 24, 2000.
"Inhibition of angiogenesis by heparin-binding peptides"

Department of Physiology, January 19, 2001
"Effect of extracellular molecules on the adhesion, migration, and proliferation of corneal endothelial cells"

Department of Structural and Cellular Biology, May 9, 2001
"Thrombospondin peptides inhibit ocular angiogenesis"

Signal Transduction Workshop, March 25, 2003
"Cell Adhesion to Extracellular Matrix: Making the Most of Your Data with the Hill Equation"

EDITORIAL RESPONSIBILITIES:

Analytical Chemistry, ad hoc referee
Analytical Biochemistry, ad hoc referee
Biotechnology Progress, ad hoc referee
Experimental Cell Research, ad hoc referee
Langmuir, Ad hoc referee
Biotechniques, Ad hoc referee
Proceeding of the National Academy of Science, USA, ad hoc referee
Investigative Ophthalmology and Visual Science, Guest Editorial Board Member, 2000-present

Analytica Chimica Acta, ad hoc referee
Biosensors and Bioelectronics, ad hoc referee
Current Eye Research, ad hoc referee
Journal of Biological Chemistry, ad hoc referee
Biochimica Biophysica Acta, ad hoc referee
Journal of Immunological Methods, ad hoc referee

PROFESSIONAL SOCIETIES:

Am. Society for Cell and Develop. Biology
Assoc. Research in Vision and Ophthalmology
Am. Society for Biochem. and Mol. Biology
Society for Thrombosis and Hemostasis

Am Society for the Advancement of Science
Society for Glycobiology
American Chemical Society
North Am. Vascular Biology Organization

EXTRAMURAL SERVICE:

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| National Science Foundation | Member of Advisory Panel for Cell Biology, 1988-93 Member of Special Emphasis Panel, 1994, 1997 Member of Biocomplexity Panel, 2000 |
| American Heart Association, Tennessee Affiliate | Member of Peer Review Committee, 1988-1990 |
| Tennessee Valley Authority | Member of Review Panel for Environmental Sensors Program, 1995 |
| Environmental Protection Agency | Peer Review Panel B, Exploratory Research in Environmental Biology, 1998 Peer Review Panel II for Exploratory Environmental Chemistry, 1999 Peer Review Panel, STAR Graduate Fellowships for Biochemistry, Molecular Biology, and Genetics, 2002 |
| National Institutes of Health | National Institute of General Medical Sciences Special Emphasis Panel, 2000 (mail review) |
| North Carolina Biotechnology Center | Ad hoc proposal reviews, 1999 |
| The Wellcome Trust, UK | Ad hoc proposal review, 2001 |
| Kentucky Science and Engineering Foundation | Ad hoc proposal review, 2003 |
| St. Tammany Parish Schools | Presentations on science as a career; Synthesis of “Slime” as a demonstration of polymerization 1994-1997 |
| St. Tammany Parish Police Jury | Member of the Focus Group on Environmental Issues, New Directions 2025 (St. Tammany Parish Plan), 1999- |

UNIVERSITY SERVICE:

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| Department of Ophthalmology | United Way Coordinator, 1995 |
| School of Medicine Medical School Admissions Committee | Conducted interviews for medical students, 1997-02 |
| Interdisciplinary Program in Molecular and Cellular Biology (MCB) | Representative for Clinical Faculty, MCB Steering Committee, 1996-present |

UNIVERSITY SERVICE, continued:

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| Interdisciplinary Program in Molecular and Cellular Biology (MCB) | Co-coordinator (with Dr. Rabon) for 6th Annual MCB Retreat, Nov 7-8, 1997 at the Audubon Zoo |
| TUXCOE Leadership Task Force | Member, 1999-present |
| School of Medicine Strategic Plan Steering Committee, Research Subcommittee | Member, 1999 |
| Judge, Twelfth Annual Tulane Health Research Day | April, 2000 |
| Medical School Faculty Advisory Committee (elected position) | May 2000- April 2001, May 2002-April 2005 |
| MCB Internal Review Committee | January 2001 - March 2002 |
| MCB Clinical Sciences Subcommittee | March 2002- present |
| MCB Co-Director (elected position) | January 2003- January 2006 |

TEACHING EXPERIENCE:

Meharry Medical College (1984-93)

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|---|--|
| Medical Biochemistry, 1984-1993 (100 students/yr) | Carbohydrate structure and metabolism Lipid structure and metabolism Membranes and transport Lysosomal storage diseases Structure and function of connective tissue Structure and function of glycoconjugates |
| Dental Biochemistry 1985, 1988-93 (Course Coordinator, 1990-93) (70 students/yr) | Carbohydrate structure and metabolism Calcium and vitamin D metabolism Membranes and transport Structure and function of connective tissue Metabolism of mineralized tissue Structure and function of glycoconjugates |
| Graduate Biochemistry 1988, 1992 (20 students/yr) | Membranes and transport Signal transduction pathways |
| Metabolic Regulation, 1989 (Graduate level course) (10 students/yr) | Signal transduction pathways Protein turnover Extracellular matrix molecules and receptors |
| Pathology of the Extracellular Matrix (at Vanderbilt Univ., 1990-1992) (35 students/yr) | Proteoglycan structure, function, and biosynthesis |
| Membrane Biochemistry, 1992 (Course Coordinator) (10 students/yr) | Lipid and membrane structure Membrane biosynthesis and turnover Transport, Signal transduction Structure and function of membrane proteins Cell surface glycosylation and glycanation |

Tulane University School of Medicine, 1994-present

Department of Ophthalmology

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|---|--|
| Basic Science Course for Residents, 1994-present (6 students/yr) | Biochemistry of vision Corneal ultrastructure |
| Ophthalmic Assistants Course, 1994-1997 (20 students/yr) | Viral infections of the eye Acanthamoeba infections |

TEACHING EXPERIENCE, continued:
Tulane University School of Medicine, 1994-present

Department of Biochemistry

Structure and Function of Biomolecules
(GBCH 714, 722) 1994-1996
(5-10 students/yr)

Structure and function of membranes
Membrane protein topology
Signal transduction

Medical Biochemistry (MBCH 114)
(150 students in Spring, 30-40 students in Summer/yr)

Summer, 1994-1997

Signal transduction

Spring, 1998

Digestion/absorption of lipids
Fatty acid synthesis
Fatty acid oxidation
Phospholipids and eicosanoids
Structure and properties of lipids
Plasma lipoproteins
Lipid transport

Summer, 1998

Regulation of cholesterol biosynthesis
Bile acids and cholesterol
Enzyme classification
Enzyme regulation
Blood clotting and fibrinolysis

Spring or Summer, 1999-2001

Amino acids: Structures and properties
pH in biological systems
Protein structure and folding
Enzyme classification
Enzyme kinetics
Enzyme regulation I and II
Structure and function of hemoglobin
Hemoglobinopathies
Structure and function of collagen
Connective tissue diseases
Blood Coagulation
Fibrinolysis

Summer, 2002

Structure and Function of Hemoglobin
Hemoglobinopathies
Antibody structure and function
Blood Coagulation and Fibrinolysis
Diabetes and Integration of Metabolism

**TEACHING EXPERIENCE, continued:
Tulane University School of Medicine, 1994-present**

Department of Biochemistry

Spring, 2001-2003

Bioenergetics
Glycolysis
Citric acid cycle
Oxidative phosphorylation
Hexose monophosphate shunt
Uronic acid pathway
Fructose and galactose metabolism
Glycogen metabolism
Regulation of carbohydrate metabolism
Nucleotide metabolism (in 2003)

Interdisciplinary Program in Molecular and Cell Biology

Cell Biology (MCB 607, 15-25 students/yr)
1995-present (Coordinated Block I, 1998-2000)

Extracellular matrix, Plasma membranes
Cell Compartments, Protein Trafficking

Cell Biology (MCB 608, formerly Cell 608)
(15-25 students/yr) 1995-1997

Overview of signal transduction

MCB Workshop (MCB 711-01), 1996
(15 students/yr)

Course Coordinator

Laboratory Rotations, (MBC 713)
1994-present

Directed rotations for 1-2 students/yr

Molecular Basis of Disease (MCB 777-02),

Definition and causes of angiogenesis
Angiogenic signal transduction

STUDENTS SUPERVISED:

Ph.D. Dissertation Director

Pamela Y. Johnson, Ph.D., Biochemistry, March 1997

Meharry Medical College (finished thesis research at Tulane University)

Current Position: Staff Researcher, Hope Heart Institute, Seattle, WA

James B. Delehanty, Ph.D. Molecular and Cellular Biology, June 2001

Tulane Interdisciplinary Program in Molecular and Cellular Biology

Recipient: Graduate Research Scholarships from Tulane/Xavier Center for

Bioenvironmental Research, 1998-2000

Travel Award and Best Paper, Regional Meeting of Southwest Section
of Federation for Experimental Biology and Medicine, 1999

Chancellor's Award for Best Research Paper, Tulane's 12th Annual Research
Day, 2000

National Research Council Postdoctoral Fellowship, 2001

Current Position: Research Biologist, Naval Research Laboratories, Washington, D.C.

Robert Mark Jones, Ph.D. Molecular and Cellular Biology, March 2002

Tulane Interdisciplinary Program in Molecular and Cellular Biology

Recipient: DOE Travel Award, 50th Anniversary Meeting of Nobel Laureates

in Lindau, Germany (one of 30 U.S. students chosen), 2000

Morris Schaeffer Award for Best Student Presentation, Molecular and Cellular
Biology Graduate Program, 2000

European Community-US Task Force on Biotechnology Research Fellowship
Short-term Exchange of Early Career Scientists, 2002 (declined)

Current Position: Director of Technical Applications and Business Development,
Sapidyne Instruments, Inc. Boise, ID

Tiera S. Coston, Ph.D., Molecular and Cellular Biology, expected December 2003

Tulane Interdisciplinary Program in Molecular and Cellular Biology

Recipient: NRSA Individual Predoctoral (5F31 EY06755), National Eye Institute, NIH

NEI Short Course Fellowship: Fundamental Issues in Vision Research, 1996

Travel Award, National Meeting of American Society of Cell Biology, 1997

Alison M. Kriegel, Ph.D. Molecular and Cellular Biology, expected March 2004

Tulane Interdisciplinary Program in Molecular and Cellular Biology

Recipient: Award for Best Poster Presentation, 9th Annual MCB Retreat, 2000

Student Research Grant, Cancer Society of Greater New Orleans, 2001

European Community-US Task Force on Biotechnology Research Fellowship
Short-term Exchange of Early Career Scientists, 2002

Elizabeth R. Abboud, Ph.D. Molecular and Cellular Biology, expected June 2005

Tulane Interdisciplinary Program in Molecular and Cellular Biology

Recipient: Graduate Fellowship, CREST/LUMCON (total: \$30,000), 2003-2004

STUDENTS SUPERVISED, continued:

Member, Preliminary Exam/Dissertation Committee

Jeffrey Yuziuk, Biochemistry, Ph.D. 1996
Jamilah Borjac, Biochemistry, Ph.D. 1997
Lu-Shu Yeh, Biochemistry, Ph.D. 1998
Shaun Armstrong, Molecular and Cellular Biology, Ph.D. 1998
Scott Schaller, Molecular and Cellular Biology, Ph.D. 1999
Danielle Gray, Neuroscience, Ph.D., 1999
James Muhitch, Chemical Engineering/MCB, M.S., 1998, Ph.D. 2000
Gururaj Kalkeri, Molecular and Cellular Biology, Ph.D. 2000
Jennifer O'Neil, Molecular and Cellular Biology, Ph.D. 2000
David Colter, Molecular and Cellular Biology, Ph.D. 2001
Sam Rulli, Molecular and Cellular Biology, Ph.D. 2001
Michael Bolton, Molecular and Cellular Biology, Ph.D. 2001
Thomas Christopher Stewart, Cell and Molecular Biology, Ph.D. 2001
Sylvia Alappat, Cell and Molecular Biology, Ph.D. 2001
Amy Green, Molecular and Cellular Biology, Ph.D. 2001
Brain Siegel, Molecular and Cellular Biology, M.S. 2002
Deborah Edwards, Molecular and Cellular Biology, Ph.D. 2002
Kathryn Jones, Molecular and Cellular Biology, Ph.D. 2003
Daniel Frigo, Molecular and Cellular Biology
Kimberly Anderson, Biochemistry
Kiran Arise, Physiology

Department of Ophthalmology Resident/Fellow Research Projects:

1994: Allen T. Huang: "Enzymatic Proteolysis in Cataract Extraction" (Honorable Mention, Basic Science category)
1995: Matthew Deich: "Cytotoxic Effects of Mature Cortical Cataract Proteins on Corneal Endothelium" (Honorable Mention, Basic Science Category)
Sophia Sarkos: "Generation of a Thrombospondin Standard Curve"
1996: Matthew Deich: "Growth Factor Effects on Ptergium Cells in vitro"
Noel DeLeon: "The Role of Lymphocyte Fas Antigen: A Hypothesis in Corneal Graft Rejection" (Winner, Basic Science Category)
Sophia Sarkos: "Update on Thrombospondin" (Honorable Mention, Bas. Sci.)
Freddy Vazquez: "In vitro Assessment of the Role of Mitomycin C as an Inhibitory Factor of Pterygial and Normal Conjunctival Cells"
Luis Villani: "Interaction between Cat Sclera and Gortex: A Possible Keratoprosthesis Anchoring Material"
1997: Matthew Deich: "Corneal Endothelial Toxicity"
Noel DeLeon: "A Hypothesis for the Role of Fas Ligand in Corneal Graft Rejection (Winner, Basic Science Category)
Andrew Lee: "Development of an Immunoassay for Antiangiogenic Peptide in Ocular Fluids" (Honorable Mention, Basic Science Category)

STUDENTS SUPERVISED, continued:

Department of Ophthalmology Resident/Fellow Research Projects:

- 1997: Freddy Vazquez: "In vitro Assessment of Mitomycin C and Atropine as Inhibitory Factors for Pterygial and Normal Conjunctival Cells"
- 1998: Rebecca Crawford: "FK506 Standard Curve and FK506 in Anterior Chamber Fluid"
Noel DeLeon: "Intracameral Lidocaine and Fluorescein: A Study of the Viability of Human Corneal Endothelial Cells" (Winner, Basic Science Category)
Nilu Maboudi: "Inhibition of Endothelial Cell Proliferation by a Peptide Derived from Thrombospondin" (Honorable Mention, Basic Science Category)
Lee Novick: "In vitro Effects of Latanoprost and Clonidine on Corneal Endothelial Cells"
Freddy Vazquez: "In vitro Effects of Glaucoma Medications in Corneal Endothelium"
Luis J. Villani: "Further Studies on the Flexible Keratoprosthesis"
- 1999: Asad Abbas "Inhibition of Corneal Neovascularization with a Peptide Derived from Thrombospondin"
Rebecca Crawford "FK-506 Endothelial Cell Toxicity"
Lee Novick "The Effect of Topical Anti-glaucoma Medications on Human Corneal Endothelial Cells, Part I"
Freddy Vazquez "The Effect of Topical Anti-glaucoma Medications on Human Corneal Endothelial Cells, Part II"
Theresa Turla "The Effect of Cyclosporin on Corneal Endothelial Cells"
- 2001: Melanie Henry "Adherence of Pseudomonas aeruginosa and Escherichia coli to Contact Lenses", (Finalist, Rabb-Venable Ophthalmology Award)
Linda Vargas "Bacterial Adherence to Intraocular Lenses"
Yen T. Dang "Quantifying Pseudomonas aeruginosa Adhesion to Contact Lenses (Winner of Young Investigator Travel Grant for the 2002 CLAO Annual Meeting)"
Wendy Lee "Development of an Immunoassay for FK506 in Whole Blood"
Rebecca Metzinger "Development of Topical FK506"
Valla Djafari "The Effect of Various Anterior Capsule Staining Components on the Corneal Endothelium"
Tatiana Lee-Chee "Contact Lens Treatment of Monoclonal Gammopathy of Undetermined Origin"
- 2002: Eric Huttenbach "Effect of Short-term Wear on Pseudomonas aeruginosa Adherence to Contact lenses"

STUDENTS SUPERVISED, continued:

Postdoctoral Research Associates

Mehraban Khosraviani, Ph.D. 1995-1998

Current position: Research Supervisor, AMGEN, Thousand Oaks, CA

Afshin Shafiee, Ph.D. 1996-1998

Current position, Research Scientist, Bausch and Lomb, Rochester, NY.

Andrey R. Pavlov, Ph.D., 1996-2000

Current position, Senior Research Scientist, Fidelity Systems, Inc. Gaithersburg, MD

Ibrahim A. Darwish, Ph.D., 1999-2001

Current position, Postdoctoral Lecturer, Department of Pharmaceutical Analytical Chemistry, Faculty of Pharmacy, Assiut University, Assiut 71516, Egypt

Xia Li, Ph.D., 2002-present

Department of Biomedical Engineering (BMEM 403-404) Senior Thesis Projects

Thad Miller: “Culture of Corneal Endothelial Cells on Microcarrier Beads”

Alex Minter: “The Effect of Biopolymer Pretreatment on the Stability of an Artificial Cornea”

University of New Orleans Apprenticeship in Science Program

1995 Scott Wilson

1996 Darlene Linder

Summer Pipeline Research Initiative: The Tulane Experience (Research Training of Xavier University Undergraduates)

2000 Randi Smith “Detection of Lead by Immunoassay”
Recipient: First Place, poster presentation
 NSF Xavier/UNCF LSAMP Undergraduate Research Conference,
 New Orleans, LA, August 2000
Recipient: First Place, Division of Chemistry and Chemical Engineering,
 First Annual Undergraduate HBCU Science and Engineering Conference,
 Tuskegee University, October 2000
Recipient: UNCF Merck Undergraduate Science Research Scholarship,
 (one of 15 chosen nation-wide) and MIDARP Research Scholarship, 2001
Graduate Student, Organic Chemistry, Emory University, Atlanta, GA 2002-

STUDENTS SUPERVISED, continued:

Summer Pipeline Research Initiative: The Tulane Experience (Research Training of Xavier University Undergraduates), continued

2003 Antoine Clinton “P(HEMA) Polymers with Incorporated Mitomycin C: A new Device to Control the Fibroproliferative Response after Glaucoma Surgery”

MBRS-RISE program, University of the Virgin Islands (for UVI Undergraduates)

2001 Cornel Phillip “Comparison of Immunoassays for Determination of Cadmium in Environmental Samples”
Recipient: NIH Post-Baccalaureate Program Grant, NIEHS/NIH, 2002

Tulane University Medical Students – Ophthalmology Research Elective

2001 Aravinda Rao
“Quantifying *Pseudomonas aeruginosa* Adhesion to Contact Lenses”

2002 Nathan Harrison
“Role of FK506 in prevention of corneal rejection”

2003 Brian Groat
“The protein coat on soft contact lenses directs bacterial adhesion”

2003 Kori Galler
“P(HEMA) Polymers with Incorporated Mitomycin C: A new device to control the fibroproliferative response after glaucoma surgery”

PROFESSIONAL PUBLICATIONS:

1. D.A. Blake and H.E. Conrad (1979) "Hybrid glycosaminoglycans synthesized by monolayers of chick embryo arterial fibroblasts", *Biochemistry* **24**:5475-582.
2. W.S. Stanley, B.P. Peters, D.A. Blake, D. Yep, E.H.Y. Chu, and I.J. Goldstein (1979) "Interaction of wild-type and variant mouse 3T3 cells with lectins from *Bandeiraea simplicifolia* seeds", *Proc. Nat. Acad. Sci. USA* **76**:303-307.
3. I.C. Li, D.A. Blake, I.J. Goldstein, and E.H.Y. Chu (1980) "Modification of cell membrane in variants of Chinese hamster cells resistant to abrin", *Expt. Cell. Res.* **129**:351-360.
4. D.A. Blake and I.J. Goldstein (1980) "Resolution of nucleotide sugars and oligosaccharides by lectin affinity chromatography", *Anal. Biochem.* **102**:103-109.
5. I.J. Goldstein, D.A. Blake, S. Ebisu, T.J. Williams, and L.A. Murphy (1981) "Carbohydrate binding studies on the *Bandeiraea simplicifolia* I isolectins", *J. Biol. Chem.* **256**:3890-3893.
6. D.A. Blake and I.J. Goldstein (1981) "An α -D-galactosyltransferase activity in Ehrlich ascites tumor cells", *J. Biol. Chem.* **256**:5387-5393.
7. D.A. Blake and I.J. Goldstein (1982) "Resolution of carbohydrates by lectin affinity chromatography", *Methods in Enzymol.* **83**:127-132.
8. E.M. Goudsmit and D.A. Blake (1983) "Regulation of galactogen synthetase activity in *Helix pomatia*", in *Molluscan Neuro-endocrinology*, J. Lever and H.H. Boer, Eds. North-Holland Publishing, New York, pp. 159-167.
9. E.M. Goudsmit, F. Matsuura, and D.A. Blake (1984) "Substrate specificity of D-galactose oxidase", *J. Biol. Chem.* **259**:2875-2878.
10. N.R. Plessas, D.A. Blake, and I.J. Goldstein (1984) "Synthesis of N-acetyllactosamine containing a D-[6-³H]galactopyranosyl group", *Carbohydrate Chem.* **129**:143-147.
11. D.A. Blake, M.T. Skarstedt, J.L. Schultz, and D.P. Wilson (1984) "Zymogen activation: A new system for homogeneous ligand-binding assay", *Clinical Chemistry* **30**:1452-1456.
12. M.J. Elices, D.A. Blake, and I.J. Goldstein (1986) "Purification and characterization of a UDP-Gal:(-D-Gal(1,4)-D-GalNAc α (1,3)-galactosyltransferase from Ehrlich ascites tumor cells", *J. Biol. Chem.* **261**:6064-6072.
13. D.A. Blake and N.V. McLean (1989) "A colorimetric assay for the measurement of D-glucose consumption by cultured cells", *Anal. Biochem.* **177**:156-160.

PEER-REVIEWED PUBLICATIONS, continued:

14. R.C. Blake II, R.F. Vassall, and D.A. Blake (1989) "The Michaelis constants of a non-chromogenic substrate may be determined using a chromogenic substrate", *Arch. Biochem. Biophys.* **272**:52-68.
15. E.M. Goudsmit, P.A. Ketchum, M.K. Grossens, and D.A. Blake (1989) "Biosynthesis of galactogen: identification of $\alpha(1,6)$ -D-galactosyltransferase activity in *Helix pomatia* albumen glands", *Biochim. Biophys. Acta* **992**:289-297.
16. D.A. Blake and N.V. McLean (1990) "High-pressure, anion-exchange chromatography of proteoglycans", *Anal. Biochem.* **190**:158-164.
17. I.D. Munjal, D.R. Crawford, D.A. Blake, M.D. Sabet, and S.R. Gordon (1990) "Thrombospondin: biosynthesis, distribution, and changes associated with wound repair in corneal endothelium", *Eur. J. Cell Biol.* **52**:252-263.
18. N.H. Guo, H.C. Krutzsch, E. Negre, T. Vogel, D.A. Blake, and D.D. Roberts (1992) "Heparin- and sulfatide-binding peptides from the type I repeats of thrombospondin promote melanoma cell adhesion", *Proc. Nat. Acad. Sci. USA* **89**:3040-3044.
19. T. Vogel, N.H. Guo, H.C. Krutzsch, D.A. Blake, J. Hartman, S. Mendelovitz, A. Panet, and D.D. Roberts (1993) "Modulation of endothelial cell proliferation, adhesion, and motility by recombinant heparin-binding domain and synthetic peptides from the Type I repeats of thrombospondin". *J. Cell. Biochem.* **53**:74-84.
20. T. Vogel, D.A. Blake, N.H. Guo, V.S. Zabrenetzky, and D.D. Roberts (1993) "Specific simple sugars promote chemotaxis and chemokinesis of corneal endothelial cells", *J. Cell. Physiol.* **157**:359-366.
21. T. Vogel, N. Guo, N. Drezlich, H.C. Krutzsch, D.A. Blake, A. Panet, and D.D. Roberts (1994) "Apolipoprotein E: A potent inhibitor of endothelial and tumor cell proliferation", *J. Cell. Biochem.*, **54**:299-308.
22. I.D. Munjal, N.V. McLean, M.B. Grant, and D.A. Blake (1994) "Differences in the synthesis of secreted proteins in human retinal endothelial cells of diabetic and nondiabetic origin", *Current Eye Research*, **13**:303-310.
23. P. Chakrabarti, F.M. Hatcher, R.C. Blake II, P.A. Ladd, and D.A. Blake (1994) "Enzyme immunoassay to determine heavy metals using antibodies to specific heavy metal EDTA complexes: optimization and validation of an immunoassay for soluble indium", *Anal. Biochem.*, **217**:70-75.
24. D.A. Blake, P. Chakrabarti, F.M. Hatcher, and R.C. Blake (1994) "Enzyme immunoassay to determine heavy metals", in Proceedings of the 17th Annual EPA Conference on Pollutants in the Environment, US EPA Office of Water, EPA Publication 821-R-95-008, pp. 293-316.

PROFESSIONAL PUBLICATIONS, continued:

25. K.M. Francis, K.C. O'Connor, D.A. Blake, D.R. Caldwell, and G.F. Spaulding (1995) "Growth and structure of corneal tissue in simulated microgravity", in *Animal Cell Technology: Developments towards the 21st Century*, R.E. Spier, J.B. Griffiths, and E. Beuvery, Eds. Kluwer Academic Publishers, Boston, pp. 959-963.
26. D.A. Blake, S. E Wilson, P. Chakrabarti, and F.M. Hatcher (1995) "Measurement of heavy metals in waste water by immunoassay: Adaptation of the assay for rapid field testing" in *Proceedings of Environmental Laboratories: Testing the Waters*, Water Environment Federation, Alexandria, VA, pp. (6)31-(6)39.
27. D.A. Blake, P. Chakrabarti, M. Khosraviani, F.M. Hatcher, C.M. Westhoff, P. Goebel, D.E. Wylie, and R.C. Blake, II (1996) "Metal binding properties of a monoclonal antibody directed towards metal-chelate complexes", *J. Biol. Chem.*, **271**:27677-27685.
28. D.A. Blake, D.R. Whikehart, H. Yu, T. Vogel, and D.D. Roberts (1996) "Common cryopreservation media deplete corneal endothelial cell plasma membrane Na⁺,K⁺ ATPase activity", *Current Eye Research*, **15**:263-271.
29. D.A. Blake, G.N. Dawson, P. Chakrabarti, F.M. Hatcher (1996) "Assay of heavy metals using antibodies to metal-chelate complexes", in *Environmental Immunochemical Methods: Perspectives and Applications*. Ed. Van Emon, J.M., Gerlach, C.L., and Johnson, J.C. American Chemical Society Symposium Series, Vol. 646, Washington, D.C., pp. 10-22.
30. P.Y. Johnson and D.A. Blake (1997) "Rapid size exclusion chromatography of proteoglycans", *J. Chromatography B*, **688**:27-33.
31. D.A. Blake, H. Yu, D.L. Young, and D.R. Caldwell (1997) "Matrix stimulates the proliferation of human corneal endothelial cells", *Invest. Ophthalmol. Vis. Sci.*, **38**:1119-1129.
32. D.A. Blake, M. Khosraviani, A.R. Pavlov, and R.C. Blake, II (1997) "Characterization of a metal-specific monoclonal antibody", in *Immunochemical Technology for Environmental Applications*, Eds. Aga, D.S., and Thurman, E.M. American Chemical Society Symposium Series, Vol. 657, Washington D.C., pp. 49-60.
33. D.A. Blake, A.R. Pavlov, M. Khosraviani, and R.C. Blake, II (1997) Determination of antibody affinity and specificity, *Proceedings of Immunochemistry Summit V and Joint National Conference for Environmental Health Monitoring*, Ed. Joseph, J.M. Association of State and Territorial Public Health Laboratories, Washington, D.C., pp. 95-106.
34. A.R. Pavlov, M. Khosraviani, J. E. Chaiban, and D.A. Blake (1997) "Strategies and problems in the isolation of metal-specific monoclonal antibodies", *Antibody Engineering II: New Technology, Application, and Commercialization*, Vol. II, IBC USA Publishing, Southborough, MA, pp. 5.1.1-5.1.20

PROFESSIONAL PUBLICATIONS, continued:

35. M. Khosraviani, A.R. Pavlov, G.C. Flowers, and D.A. Blake (1998) "Detection of heavy metals by immunoassay: Optimization and validation of a rapid, portable assay for ionic cadmium", *Environ. Sci. Tech.*, **32**:137-142.
36. D.A. Blake, R.C. Blake II, M. Khosraviani, and A.R. Pavlov (1998) "Metal ion immunoassays", *Anal. Chim. Acta*, **376**:13-19.
37. R.N. Knibbs, M. Takagaki, D.A. Blake, and I. J. Goldstein (1998) "The role of valence on the high-affinity binding of Griffonia simplicifolia isolectins to Type A human erythrocytes", *Biochemistry* **37**:16952-16957.
38. D.A. Blake, A.R. Pavlov, M. Khosraviani, and G.C. Flowers (1998) "Immunoassay for cadmium in ambient water samples", in *Current Protocols in Field Analytical Chemistry*, Ed. V. Lopez-Avila, John Wiley and Sons, Inc. New York, pp. 3C.1.1-3C.1.10.
39. R.C. Blake II, A.R. Pavlov, and D.A. Blake (1999) "Automated kinetic exclusion assays to quantify protein binding interactions in homogeneous solution", *Anal. Biochem.* **272**:123-134.
40. M. Khosraviani, R.C. Blake II, A.R. Pavlov, S.C. Lorbach, H. Yu, J.B. Delehanty, M.W. Brechbiel, and D.A. Blake (2000) "Binding properties of a monoclonal antibody directed toward lead-chelate complexes", *Bioconj. Chem.*, **11**:267-277.
41. J. W. Muhitch, K.C. O'Connor, D.A. Blake, D.J. Lacks, N. Rosenzweig, and G.F. Spaulding (2000) "Characterization of aggregation and protein expression of bovine corneal endothelial cells as microcarrier cultures in a rotating-wall vessel", *Cytotechnol.*, **32**:253-263.
42. A. Shafiee, J.S. Penn, H.C. Krutzsch, J.K. Inman, D.D. Roberts, and D.A. Blake (2000) "Inhibition of retinal angiogenesis by peptides derived from thrombospondin-1", *Invest. Ophthalmol. Vis. Sci.*, **41**:2378-2388.
43. D.J. Meffert, D.A. Blake, R.C. Blake II, and R.G. Rey (2000) "Biosensor Development for Autonomous Real-Time Monitoring of Environmental Toxicants", *Proceedings of Autonomous Undersea Systems Institute: Sensors and Sensing Technology for Autonomous Ocean Systems Workshop*, Waikoloa, HI.
44. I.A. Darwish and D.A. Blake (2001) "One-step competitive immunoassay for cadmium ions: development and validation for environmental water samples", *Anal. Chem.*, **73**:1889-1895.
45. D.A. Blake, A.R. Pavlov, H. Yu, M. Khosraviani, H.E. Ensley, and R.C. Blake II (2001) "Antibodies and antibody-based assays for hexavalent uranium", *Anal. Chim. Acta*, **444**:3-11.
46. D.A. Blake, R.M. Jones, R.C. Blake II, A.R. Pavlov, I.A. Darwish, and H. Yu (2001) "Antibody-based sensors for heavy metal ions", *Biosens. Bioelectron.*, **16**:799-809.

PROFESSIONAL PUBLICATIONS, continued:

47. D.A. Blake, H. Yu, and R.C. Blake II (2001) "Development of rapid, portable immunoassays for heavy metals in acid mine drainage", *Biohydrometallurgy and the Environment- IBS 2001* (A. Ballerter and R. Amils, eds.) Elsevier, Amsterdam, Volume B, pp. 533-540.
48. D.J. Meffert, D.A. Blake, R.C. Blake II, and R.G. Rey (2001) 'Antibody, cell-based, and transgenic fish biosensors for autonomous monitoring of environmental toxicants', *Proceedings of Autonomous Undersea Systems Institute: Sensors and Sensing Technology for Autonomous Ocean Systems Workshop*, Newport, RI.
49. I.A. Darwish and D.A. Blake (2002) "Development and validation of a sensitive one-step immunoassay for determination of cadmium in human serum", *Anal. Chem.*, **74**:52-58.
50. R.M. Jones, H. Yu, J.B. Delehanty, and D.A. Blake (2002) "Monoclonal antibodies that recognize minimal differences in the 3-dimensional structures of metal-chelate complexes", *Bioconj. Chem.*, **13**: 408-415.
51. M. Genaidy, A.A. Kazi, G.A. Peyman, E. Passos-Machado, H.G. Farahat, J.I. Williams, K.J. Holroyd, and D.A. Blake (2002) "Effect of squalamine on iris neovascularization in monkeys", *Retina*, **22**:772-778.
52. R.C. Blake II, J.B. Delehanty, M. Khosraviani, H. Yu, R.M. Jones, and D.A. Blake (2003) "Allosteric binding properties of a monoclonal antibody and its Fab fragment", *Biochemistry*, **42**:497-598.
53. Y.N.T. Dang, A. Rao, P.R. Kastl, R.C. Blake II, M. J. Schurr, and D.A. Blake (2003) "Quantifying *Pseudomonas aeruginosa* adhesion to contact lenses", *Eye & Contact Lens: Science & Clinical Practice*, **29**:65-68.
54. M.H. Steele, A.J. Berner III, H. Chorea, J. LaCour, R. Metzinger, D.A. Blake, E. Haight, J. England, and S.E. Metzinger (2003) "The role of topically administered FK506 (tacrolimus) in facial nerve regeneration after experimental transection and entubulation neurotaphy in a rabbit model", *Arch. Fac. Plas. Surg.*, in press.
55. G. Men, G.A. Peyman, M. Genaidy, P.C. Kuo, F. Ghahramani, D.A. Blake, Y. Bezerra, G. Naaman, and E. Figueiredo (2003) "The role of recombinant lysine-plasminogen and recombinant urokinase and sulfur hexafluoride combination in inducing posterior vitreous detachment", *Retina*, in press.
56. R.C. Blake II and D.A. Blake (2003) "Kinetic exclusion assay to study high-affinity binding interactions in homogeneous solutions", *Methods in Molecular Biology, Vol. 248: Antibody Engineering: Methods and Protocols*, (Benjamin K.C. Lo, Ed.) Humana Press, Totowa, New Jersey, pp 417-430.

PROFESSIONAL PUBLICATIONS, continued:

57. D.A. Blake, A.R. Pavlov, M. Khosraviani, R.C. Blake II, and G.C. Flowers (2003) "Immunoassays as an alternative method for the analysis of heavy metals in environmental samples", in *Immunoassays: Methods and Protocols*, (Ed. A.L. Ghindilis, A.R. Pavlov, and P.B. Atayosov.) Series title: *Methods in Molecular Biology*, Humana Press, Inc., Totowa, New York, in press.

58. J.B. Delehanty, R.M. Jones, T.C. Bishop and D.A. Blake (2003) "Identification of important residues in metal-chelate recognition by monoclonal antibodies", *Biochemistry*, in press.

59. T.R. Glass, N. Ohmura, H. Saiki, D.A. Blake, R.C. Blake II, and S.J. Lackie (2003) "Use of excess solid phase capacity in immunoassays: Advantages for semi-continuous, near real time measurements and for analysis of matrix effects", *Anal. Chem.*, in press.

L.M. Diaz., S.D. Metzinger, M.H. Steele, A.B. Guerra, F.E. Aubert, G.D. Sloop, H.A. Diaz, R.C. Metzinger, D.A. Blake, and C.L. Delaune (2003) "The role of topically administered FK506 (tacrolimus) at the time of facial nerve repair utilizing entubulation neurorrhapy in a rabbit model", *Annals of Plastic Surgery*, submitted.

R.C. Blake II, A.R. Pavlov, M. Khosraviani, H.E. Ensley, G.E. Keifer, H. Yu, X. Li, and D.A. Blake (2004) Novel monoclonal antibodies with specificity for chelated uranium(VI): Isolation and binding properties, *Biochemistry*, submitted.

MANUSCRIPTS IN PROGRESS:

T.S. Coston, T. Vogel, D.D. Roberts, and D.A. Blake. "Integrin Expression and Activity in Early Passage Cultures of Human Corneal Endothelial Cells and a Virally-Transduced Cell Line", in preparation for *Invest. Ophthalmol. Vis. Sci.*

A. Arimura, M. Kochi, H.E.P. Bazan, Y. Cao, M.B. Bharracharjee, A. Somogyvari-Vigh, X. Ma, R. Cao, L. Florez, D.A. Blake, and R.S. Weiner (2002) "Sodium-5,6-O-benzylidene-ascorbate: an anti-tumor compound with a potent anti-angiogenic activity and low toxicity", in preparation for *Nature*.

A.S. Soliman, A.M. Kriegel, N. El-Ghawalby. F. Ezzat, M.L. Bondy, A. Soultan, M. Abdel-Wahab, O. Fathy, G. Ebidi, N. Bassiouni, Q. Zhang, S. R. Hamilton, J. L. Abbruzzese, and D.A. Blake (2003) "Serum cadmium levels in pancreatic cancer patients from the east Nile Delta region of Egypt", in preparation for *J. Nat. Can. Inst.*

RECENT ABSTRACTS (1998-2003):

D.A. Blake, H. Yu, M.S. Diech, and D.R. Caldwell (1998) "Cytotoxicity of 5-fluorouracil and mitomycin C in cell culture models of human corneal endothelium", *Invest. Ophthalmol. Vis. Sci.*, 39: S254

A. Shafiee, V.F. LaRussa, D.D. Roberts, and D.A. Blake (1998) "Modulation of leukocyte activity by thrombospondin peptide 296: A possible role for inhibition of retinal angiogenesis", *Invest. Ophthalmol. Vis. Sci.*, 39: S450.

T.S. Coston, H. Yu, D.R. Caldwell, and D.A. Blake (1998) "Interactions of early passage human corneal endothelial cells (HCE) and virus-transformed HCE cells with matrix molecules", *Invest. Ophthalmol. Vis. Sci.*, 39: S1127.

D.A. Blake and R.C. Blake, II (1999) "Field portable immunoassay instruments and reagents to measure chelators and mobile forms of uranium", DOE-NABIR PI Workshop, Reston, VA January 25-27.

J.B. Delehanty, M. Khosraviani, H. Yu, and D.A. Blake (1999). "Metal ion recognition by monoclonal antibodies". Southwest Section of the Society for Experimental Medicine and Biology. Feb. 26-27, University of Texas Medical Branch, Galveston, TX. 2nd Place: Graduate Student Presentations

S.J. Register, T.S. Coston, D.A. Blake, and D.R. Whikehart (1999) Bovine corneal endothelial cell p53 levels increase with culture age as telomers shorten. *Invest. Ophthalmol. Vis. Sci.*, 40: S366.

T.S. Coston, and D.A. Blake (1999) The effects of extracellular matrix molecules on human corneal endothelial cell proliferation. *Invest. Ophthalmol. Vis. Sci.*, 40: S367.

N.S. DeLeon, H. Yu, and D.A. Blake (1999) Intracameral anesthetics and fluorescein: A study on the viability of human corneal endothelial cells. *Invest. Ophthalmol. Vis. Sci.*, 40: S629.

Hot Topic: J. Muhitch, K. O'Connor, D. Blake, D. Lacks and G. Spaulding (1999) "Cultivation of Bovine Corneal Endothelial Cells in Rotating-Wall Vessel", Society for In Vitro Biology, New Orleans, LA.

J.B. Delehanty, and D.A. Blake (1999) "Structural aspects of monoclonal antibodies that bind metal-chelate complexes". 51st Southeastern Regional Meeting of the American Chemical Society, Knoxville, TN Oct. 17-20.

R.M. Jones and D.A. Blake (1999) "Monoclonal antibodies with identical heavy chains but different light chains show differential binding to Cd(II)- and Hg(II)-EDTA complexes", 51st Southeastern Regional Meeting of the American Chemical Society, Knoxville, TN Oct 17-20.

RECENT ABSTRACTS (1998-2003), continued:

D.A. Blake, R.C. Blake, II, H. Yu, and A. R. Pavlov (2000) "Antibodies and Antibody-based Sensors for Hexavalent Uranium and Chelators", DOE-NABIR PI Workshop, Reston, VA, Jan. 31-Feb. 2.

D.A. Blake, A. R. Pavlov, H. Yu, M. Khosraviani, H.E. Ensley, and R.C. Blake, II (2000) "Antibodies and antibody-based immunosensors for hexavalent uranium", Invited Presentation, 219th ACS National Meeting, San Francisco, CA, March 26-30.

A.R. Pavlov, D.A. Blake, and G.C. Flowers (2000) "Determination of lead in environmental samples by a rapid and portable immunoassay", 219th ACS National Meeting, San Francisco, CA, March 26-30.

J.B. Delehanty, M. Khosraviani, H. Yu, and D.A. Blake (2000) "Probing the nature of the binding interaction between a Pb(II)-specific monoclonal antibody and its Pb(II)-chelate antigen". Experimental Biology 2000. April 15-18, San Diego, CA.

Z.A. Karcioğlu, D.A. Blake, V. Bautman, T.S. Coston, C. Zwinzinske, H. Yu (2000) "Effect of multiple myeloma light chains on cultured human corneal endothelial cells", Invest. Ophthalmol. Vis. Sci., 41:S

D.R. Whitehart, S.J. Register, and D.A. Blake (2000) "Comparison of p53 levels in fresh vs. cultured human corneal endothelial cells", Invest. Ophthalmol. Vis. Sci., 41:S

D.A. Blake, R.C. Blake II, H. Yu, (2000) "Antibody-based sensors for heavy metal ions", Sixth World Congress on Biosensors, San Diego, CA, May 24-26.

R. Mark Jones, T.E. Wiese, and D.A. Blake (2000) "Molecular modeling of metal-chelates provides insights into mechanisms of antibody recognition", Bioinformatics on the Bayou 2000, New Orleans, LA, Nov. 16-17.

I.A. Darwish and D.A. Blake (2000) "Development and validation of a simple and sensitive immunoassay for cadmium ions in environmental water samples", 52nd Southeast-56th Southwest Combined ACS Regional Meeting, New Orleans, LA, Dec. 6-8.

I.A. Darwish, R.M. Smith, and D.A. Blake (2000) "Single-step immunoassay for detection of lead in serum", 52nd Southeast-56th Southwest Combined ACS Regional Meeting, New Orleans, LA, Dec. 6-8.

H. Yu and D.A. Blake (2000) "Quantifying hexavalent uranium with an immunosensor", 52nd Southeast-56th Southwest Combined ACS Regional Meeting, New Orleans, LA, Dec. 6-8.

RECENT ABSTRACTS (1998-2003), continued:

D.A. Blake, R.M. Jones, R.C. Blake II, and T.E. Wiese (2000) "Probing the nature of the binding interactions between metal-chelate complexes and metal-specific monoclonal antibodies", 52nd Southeast-56th Southwest Combined ACS Regional Meeting, New Orleans, LA, Dec. 6-8.

D.A. Blake, H. Yu, and R.C. Blake II (2001) "An antibody-based sensor for hexavalent uranium", PITTCON 2001, New Orleans, LA, March 5-8.

D.A. Blake, R.C. Blake II, Haini Yu, and R. Mark Jones (2001) "Immunosensors: An emerging technology", Biosensors Workshop, Division of Small Chemical Businesses, 221st ACS National Meeting, San Diego, CA, April 1-5.

D.A. Blake and I.A. Darwish (2001) "Determination of cadmium in human serum by a one-step sensitive immunoassay", Immunochemistry Summit IX, 221st ACS National Meeting, San Diego, CA, April 1-5.

M.M. Henry, A.M. Barrilleaux, R.C. Blake II, P.R. Kastl, and D.A. Blake (2001) "Adherence of *Pseudomonas aeruginosa* and *Escherichia coli* to Contact Lenses", 106th National Medical Association Meeting, Nashville TN, August 5-6. (Finalist, Rabb-Venable Ophthalmology Award)

D.A. Blake, H. Yu, and R.C. Blake II (2001) "Development of rapid, portable immunoassays for heavy metals in acid mine drainage", International Biohydrometallurgy Symposium 2001, Ouro Preto, Minas Gerais, Brazil, September 16-19.

C.J. Phillip, R.M. Jones, S.C. Lorbach, and D.A. Blake (2001) "Comparison of a one-step and two-step immunoassay for cadmium in water samples", Annual Biomedical Research Conference for Minority Students, Orlando FL, Oct. 31-Nov. 3.

R.M. Jones, H. Yu, and D.A. Blake (2001) "Monoclonal and recombinant antibodies for the analysis of cadmium in environmental waters", IBC's 12th Annual International Conference on Antibody Engineering, San Diego, CA, Dec. 2-6.

Y.N.T. Dang, A.K. Rao, D.A. Blake, and Peter R. Kastl (2002) "Quantifying *Pseudomonas aeruginosa* adhesion to contact lenses", CLAO Annual Meeting, Anaheim CA, Jan. 31- Feb. 3. (Winner of Young Investigator Travel Grant for the 2002 CLAO Annual Meeting)

D.A. Blake (2002) "Biosensors for real-time monitoring", Environmental Stewardship: Promising Solutions to Uncertainty, A DOE-sponsored Symposium on Monitoring, Risk Assessment, and Information Sciences. New Orleans, LA, Feb. 5-7, 2002.

D.A. Blake, R.C. Blake II, and H. Yu (2002) "Antibody-based sensors for hexavalent uranium", 223rd ACS National Meeting, Orlando FL, April 7-11.

RECENT ABSTRACTS (1998-2003), continued:

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