DC WRRC Report No. 142

Directory of University Water Expertise

in the District of Columbia

DC Water Resources Research Center
University of the District of Columbia

4200 Connecticut Ave., N.W. M.B. 5004
Washington, D.C. 20008
Directory of University Water Expertise in the District of Columbia

DC Water Resources Research Center
University of the District of Columbia

4200 Connecticut Avenue, NW
Washington, DC 20008

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Last Revision: July 1993
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PREFACE

The DC Water Resources Research Center was established at the University-of the District of Columbia in 1973 under the Water Research and Development Act of 1964. The mission of the DC-WRRC is to provide the District of Columbia with interdisciplinary research support to identify DC water resources problems and to contribute to their solutions. In addition, the Center promotes training, technology transfer, and information dissemination on the water and water related resources of the District of Columbia.

The Directory of university water expertise in the District of Columbia is prepared as part of the DC-WRRC information dissemination program. The directory has been assembled for several purposes:

1. to identify as nearly as possible those faculty members of universities in the District of Columbia who are actively involved in one or more aspects of water resources/research;

2. to facilitate communication among faculty members with water expertise and interests, so that cooperation and collaboration can be maximized;

3. to stimulate exchange of information between faculty members, public agencies and private organizations with interest and/or responsibility in the field of water resources; and

4. to inform interested parties of the active role that faculty members at D.C. universities are playing in the area of water resources research.

Although we contacted a wide range of people, it is inevitable that some sources were overlooked. Those who wish to be included in the next edition should fill out the Directory Update Form on page forty eight and return it to us.

The compilation of this directory was carried out by Joseline Castanos of the DC-WRRC staff. Special thanks go to faculty members who responded and made it possible for the Center to achieve its goal of compiling and publishing this directory.

Dr. M.H. Watt
Director
EXPERTISE

This section on expertise is organized according to the focus categories (Categories Of Water Resources Research), of the U.S. Department of Interior. The categories include several fields of water resources. Under each field, names of the faculty are provided.

If you know the type of information you need, but do not know who has that information, begin your search with this section. The broad categories will lead you to the contact person who can answer your specific question. More information on the contact is provided in the section II: universities (pages 19 to 26) and in the section III: faculty index (pp 29-46).
NATURE OF WATER

Properties of Water
Alexander, B.
Dey, B.
Jones, A. J.
Meijer, P.
Perros, T.
Shalaby, A.I.
Spoon, D.

Aqueous- Solutions and Suspensions
Caress, E.A.
Earley, J.
Eng, G.
Girard, J.
Logan, W.
Perros, T.
Schmidt, W.E.
Siegel, F.
Wyche, G.

WATER CYCLE

General
Brooks, C.
Dey, B.
Haque, M.
Jones, A. J.
Meijer, P.
O'Connor, J.
Perros, T.
Shalaby, A.I.
Siegel, F.
Siegenthaler, J.
Spoon, D.
Vermeer, D.E.
Wyche, G.
Young, G.K.

Precipitation
Chang, F.
Dey, B.
O'Connor, J.
Shalaby, A.I.
Vermeer, D.F.
Snow, Ice, and Frost

Dey, B.
Haque, M.
Kakovitch, T.

Evaporation and Transpiration

Haque, M.
Spoon, D.
Viterito, A.
Wilkins, A.

Streamflow and Runoff

Chang, F.
Dey, B.
Haque, M.
Mahmood, K.
O'Connor, J.
Pao, H.
Schneider
Shalaby, A.I.
Spoon, D.
Vermeer, D.E.
Watt, H.M.
Yang, T.
Young, G.K.

Groundwater

Back, W.
Caress, E.A.
Dey, B.
Haque, M.
Logan, W.
Meijer, J. O'
Connor, J.
Pao, H.
Schmidt, W.E.
Schneider
Shalaby, A.I.
Vermeer, D.E.
Young, G.K.
Water in Soils
Haque, M.
Pao, H.
Shalaby, A.I.
Wilkins, A.

Lakes
Haque, M.
Pao, H.
Spoon, D.
Young, G. K.

Water in Plants
Haque, M.
Wilkins, A.

Erosion and Sedimentation
Chang, F.
Mahmood, K.
Merchant, H.
O'Connor, J.
Vermeer, D.E.

Chemical Processes
Back, W.
Caress, E.A.
Haque, M.
Logan, W.
Perros, T.
Schmidt, W.E.
Siegel, F.
Wade, C.

Estuaries
Banta, W.
Haque, M.
Kao, T.
Knowlton, R.
O’Connor, J.
Phelps, H.
Spoon, D.
Young, G. K.
Nutrient Cycling
Carson, F.
Elhelu, M.
Haque, M.
Merchant, H.
Richardson, J.
Spoon, D.
Young, G.K.

WATER SUPPLY AUGMENTATION AND CONSERVATION

Saline Water Conservation
Jones, A. J.

Water Yield Improvement
Siegenthaler, J. Young, G.K.

Use of Water of Impaired Quality
Blackman, D.

Conservation in Domestic and Municipal use
Chawla, R.
Watt, H.M.
Young, G. K.

Conservation in Industrial Use
Alexander, B.
Pao, H.

WATER QUANTITY MANAGEMENT AND CONTROL

Control of Water on the Surface
Lieber, H.
Mahmood, K.
O'Connor, J.
Schmidt, W.E.
Schneider, J.
Siegel, F.
Siegenthaler, J.
Spoon, D.
Groundwater Management


Effects on Water of Man's Non-Water Activities


Watershed Protection

WATER QUALITY MANAGEMENT AND PROTECTION

Identification of Pollutants
Alexander, B. Caress, E.A. Carson, F. Chawla, R. Cheh, A. Choi, Y. Earley, J.
Eng, G.
Girard, J.
Jones, A. J.
Kakovitch, T.
Knowlton, R.
Lee, Y.
Montaser, A.
Perros, T.
Phelps, H.
Schmidt, W.E.
Siegel, F.
Spoon, D.
Wade, C.
Young, G.K.

Heavy Metals
Caress, E.A.
Chawla, R.
Cheh, A.
Choi, Y.
Earley, J.
Elhelu, M.
Eng, G.
Girard, J.
Knowlton, R.
Lee, Y.
Montaser, A.
Ocran, K.
Packer, R.
Perros, T.
Phelps, H.
Posey, I.
Preer, J.
Schmidt, W.E.
Siegel, F.
Spoon, D.

Toxic and Hazardous Wastes
Alexander, B.
Back, W.
Chawla, R.
Chi, M.
Choi, Y.
Elhelu, M.
Eng, G.
Girard, J.
Johnson, J.
Lee, Y.
Lieber, H.
May, L.
Sources of Pollution
Alexander, B.
Back, W.
Chawla, R.
Choi, Y.
Dey, B.
Elhelu, M.
Kao, T.
Lee, Y.
Logan, W.
Montaser, A.
O'Connor, J.
Ocran, K.
Perros, T.
Phelps, H.
Preer, J.
Schmidt, W.E.
Siegel, F.
Spoon, D.
Young, G.K.

Transport of Pollutants
Alexander, B.
Blackman, D.
Logan, W.
Montaser, A.
Perros, T.
Phelps, H.
Schneider, J.
Wade, C.

Fate of Pollutants
Black, W.
Blackman, D.
Chawla, R.
Cheh, A.
Earley, J.
Eng, G.
Kakovitch, T.
Lee, Y.
Logan, W.
May, L.
Merchant, H.
Pao, H.
Perros, T.
Phelps, H.
Posey, I.
Preer, J.
Siegel, F.
Spoon, D.
Wade, C.
Young, G.K.

**Effects of Pollution**
Alexander, B.
Back, W.
Blackman, D.
Chawla, R.
Cheh, A.
Dey, B.
Hufford T.
Kakovitch, T.
Kao, T.
Knowlton, R.
Lee, Y.
Merchant, H.
Ocran, K.
Packer, R.
Phelps, H.
Schmidt, W.E.
Siegel, F.
Siegenthaler, J.
Spoon, D.
Sze, P.
Young, G. X.

**Environmental Acidification**
Alexander, B.
Jones, A.J.
Merchant, H.
Packer, R.
Siegel, F.
Spoon, D.

**Waste Treatment Processes**
Chang, F.
Chawla, R.
Choi, Y.
Johnson, J.
Richardson, J.
Schmidt, W.E.
Spoon, D.
Watt, H.M.
Yang, T.
Young, G.K.

**Ultimate Disposal of Wastes**

Chawla, R.
Choi, Y.
Johnson, J.
Siegel, F.
Siegenthaler, J.
Spoon, D.
Wrathall, C.R.
Young, G.K.

**Water Purification**

Blackman, D.
Chawla, R.
Cheh, A.
Girard, J.
Reich, M.
Spoon, D.

**Water Treatment and Distribution**

Chawla, R.
Johnson, J.
Kakovitch, T.
Siegenthaler, J.
Spoon, D.
Watt, H.M.
Yang, T.

**Water Quality Control**

Azani, H.
Banta, W.
Blackman, D.
Carson, F.
Chi, M.
Choi, Y.
Girard, J.
Hufford, T.
Johnson, J.
Jones, A.J.
Lee, Y.
Lieber, H.
Montaser, A.
Phelps, H.
Richardson, J.
Shalaby, A.I.
Spoon, D
Young G. K.
Agricultural Waste Management

Azani, H.
Dey, B.
Johnson, J.
Lee, Y.
Siegel, F.
Non-Point Source Pollution Control
Choi, Y.
Dey, B.
O'connor, J.
Phelps, H.
Sager, M.
Schneider, J.
Spoon, D.
Young, G.K.

WATER RESOURCES PLANNING

Techniques of Planning
Azani, H.
Choi, Y.
Dey, B.
Levinson, N.
Lieber, H.
O'connor, J.
Richardson, J.
Waters, R.
Watt, H.M.
Young, G.K.
Evaluation Process
Azani, H.
Choi, Y.
Dey, B.
Hufford, T.
Levinson, N.
Lieber, H.
Siegenthaler, J.
Spoon, D.
Waters, R.
Young, G. K.

Cost Allocation, Cost Sharing, Pricing/Repayment

Azani, H.
Choi, Y.
Holman, M.
Lieber, H.
Siegenthaler, J.
Waters, R.
Young, G. K.

Water Demand
Choi, Y.
Holman, M.
Lieber, H.
Waters, R.
Watt, M. H.
Young, G. K.

Water Law and Institutions
Choi, Y.
Hannaham, J.
Holman, M.
Lieber, H.
O'Connor, J.
Reitze, A.
Siegenthaler, J.

Nonstructural Alternatives
Choi, Y.
Lieber, H.
Siegel, F.
Watt, M. H.

Ecologic Impact of Water Development

Choi, Y.
Dey, B.
Jones, A. J.
O'Connor, J.
Siegenthaler, J.
Spoon, D.
Vermeer, D.E.
RESOURCES DATA

Network Design
Johnson, J.
Mahmood, K.
Schneider, J.
Shalaby, A.I.
Viterito, A.
Yang, T.
Young, G.K.

Data Acquisition
Caress, E.A.
Chi, M.
Guerrero, V.
Hufford, T.
Mahmood, K.
Schmidt, W.E.
Schneider, J.
Shalaby, A.I.
Young, G.K.

Evaluation, Processing, and Publication
Levinson, N.
Mahmood, K.
Schneider, J.

ENGINEERING WORKS

Structures
Chi, M.
Haque, M.
Jones, I.
Kakovitch, T.
Mahmood, K.
Siegel, F.
Yang, T.

Hydraulics
Chang, F.
Chi, M.
Haque, M.
Johnson, J.
Kakovitch, T.
Kao, T.
MANPOWER, GRANTS, AND FACILITIES

Education - Extramural
Choi, Y.
Dey, B.
O'Connor, J.
Perros, T.
Schmidt, W.E.
Shalaby, A.I.

Education - In-house
Banta, W.
Choi, Y.
Dey, B.
SCIENTIFIC AND TECHNICAL INFORMATION

Acquisition and Processing
Chawla, R.
Chi, M.
Dey, B.
Perros, T.
Schneider, J.

Reference and Retrieval
Chawla, R.
Chi, M.
Dey, B.
Levinson, N.

Knowledge Transfer
Azani, H
Chawla, R.
Chi, M.
Dey, B.
Earley, J.
Hannaham, J.
Levinson, N.
Mahmood, K.
O'Connor, J.
Watt, H.M.
Young, G.K.
Secondary Publication and Distribution

Chawla, R
Chi, M.
Dey, B.
Hannaham, J.

Specialized Information Center Services

Azani, H

Preparation of Reviews

Azani, H.
Dey, B.

INTERNATIONAL

Engineering

Johnson, J.
Shalaby A.I.

Socio/Economic

Azani, H
Choi, Y
Dey, B.
Phelps, H.

Legal

Choi, Y
Hannaham, J.

OTHER

Aquaculture
Jones, A. J.

Dredging
Wrathall, C.R.
Ecology - Asia

Guerrero, V.

Hydraulics Modeling
Mahmood, K.

Industrial Wastes
Schmidt, W.E.
Wrathall, C.R.

Institution Building
Hannaham, J.

Ocean Heat Transport and its Influence on Climate
Gilheaney, J.

Pathogenic Bacteria
Wrathall, C.R.

Research on Pollution in Marine & Estuarine Systems
Phelps, H.

River Basin Development
Watt, H.M.

Sewage Sludge
Wrathall, C.R.

Social Impact of Water Problems and Engineering Works
Watt, H. M.

Theory and Physical Properties of Water
Meijer, p.

Thermal Energy Aquifer Storage
Pao, H.

Training Assistance
Hannaham, J.
Transfer Assessment of Technology
Azani, H.

Water Use in Energy Production
Watt, H. M.
This section presents a brief description of the universities in the District of Columbia where water resources expertise can be found. The researchers who responded to the questionnaire are listed under their university departments. For details about a researcher's expertise, refer to the section on the faculty index (pages 29 to 46).
THE AMERICAN UNIVERSITY

The American University is a comprehensive university located at: 4400 Massachusetts Avenue, N.W. Washington, D.C. 20016.

Chartered in 1891 and incorporated by Act of Congress in 1893, the university was founded as a Methodist-related graduate school of history and public affairs. Today American University offers a wide range of graduate and undergraduate degree programs, non-degree study as well through its five major divisions: the College of Arts and Sciences; the School of Public Affairs; Kogod College of Business Administration; and Washington College of Law. The faculty expertise of American University in Water Resources can be found in the departments listed below:

BIOLOGY DEPARTMENT
Mailing address: same as above
(202) 885-2176
William C. Banta
C. Richard Wrathall

CHEMISTRY DEPARTMENT
Mailing address: same as above
(202) 885-1750
Benjamin H. Alexander
Frederick W. Carson
Albert Cheh
James E. Girard

MATHEMATICS & STATISTICS DEPARTMENT
Mailing address: same as above
(202) 885-3120
R. W. Jernigan

SCHOOL OF PUBLIC AFFAIRS, DEPT. OF PUBLIC ADMINISTRATION
Mailing address: same as above
(202) 885-2375
Harvey Lieber

SCHOOL OF INTERNATIONAL SERVICE
Mailing address: same as above
(202) 885-1600
John M. Richardson, Jr.
Nanette S. Levinson
THE CATHOLIC UNIVERSITY OF AMERICA

The decision to find the Catholic University of America was made by the bishops of the United States in December 1884. It is located at: Michigan Avenue & Fourth Street, N.E. Washington, D.C. 20064.

The schools of the university are: School of Arts and Sciences; School of Engineering and Architecture; The Columbus School of Law; School of Library and Information Science; School of Nursing; School of Philosophy; School of Religious Studies; National Catholic School of Social Service.

The faculty expertise of Catholic University in water resources can be found in the departments listed below:

BIOLOGY DEPARTMENT

Mailing address: Biology Bldg. Washington, D.C. 20064
(202) 319-5267

Roland M. Nardone

CHEMISTRY DEPARTMENT

Mailing address: McCort-Wade Hall Washington, D.C. 20064
(202) 319-5385

Leopold May

CIVIL ENGINEERING DEPARTMENT

Mailing address: Pangborn Bldg. Washington, D.C. 20064
(202) 319-5163

Timothy W. Kao Hsieng-Ping Pao G. Kenneth Young

MECHANICAL ENGINEERING DEPARTMENT

Mailing address: Pangborn Bldg. Washington, D.C. 20064
(202) 319-5170

John J. Gilheaney
THE GEORGE WASHINGTON UNIVERSITY

The George Washington University had its beginning in 1821 as The Columbian College in the District of Columbia. The name of the institution was changed in 1873 to Columbian University and in 1904 to The George Washington University, which now includes nine colleges, schools, and divisions, as follows: Columbian College of Arts and Sciences; The Graduate School of Arts and sciences; The School of Medicine and Health Sciences The National Law Center; The School of Engineering and Applied Science; The School of Education and Human Development; The School of Government and Business Administration; The School of International Affairs; The Division of Continuing Education.

The George Washington University is located at 21st St. and I St. N.W., Washington, D.C. 20052.

The faculty expertise of George Washington University can be found in the departments listed below:

BIOLOGICAL SCIENCES DEPARTMENT
Mailing address: 2023 G St. NW Washington, D.C. 20052
(202) 994-6090

Terry L. Hufford Robert E. Knowlton Henry Merchant Randall K. Packer

CIVIL, MECHANICAL, AND ENVIRONMENTAL ENGINEERING
Mailing address: 725 23rd St.
Washington, D.C. 20052 (202) 994-6749

Muhammad I. Haque Khalid Mahmood

CHEMISTRY DEPARTMENT
Mailing address: 725 21st St. NW Washington, D.C. 20052
(202) 994-6487

Akbar Montaser Edward A. Caress
Theodore P. Perros  
William E. Schmidt  
ECONOMICS DEPARTMENT  
Mailing address: 2201 G St. NW Washington, D.C. 20052  
(202) 994-6150  

Mary A. Holman  
ENGINEERING MANAGEMENT  
Mailing address: 725 23rd St. Washington, D.C. 20052  
(202) 994-7409  

Robert C. Waters  
GEOGRAPHY DEPARTMENT  
Mailing address: 619 21st St.NW, Rm. 202 Washington,  
D.C. 20052  
(202) 994-6185  
Arthur Viterito Donald E. Vermeer  

GEOLOGY DEPARTMENT  
Mailing address: 2029 G St. NW Bell Hall Rm. 102  
Washington, D.C. 20052 (202) 994-6190  

William Back William Logan Frederic R. Siegel  

MICROBIOLOGY DEPARTMENT  
Mailing address: 2300 Eye St. Washington, D.C. 20052  
(202) 994-2907  

Melvin Reich  
SCHOOL OF LAW  
Mailing address: 720 20th St. Washington, D.C. 20052  
(202) 994-6260  
Arnold W. Reitze
GEORGETOWN UNIVERSITY

Georgetown University, established in 1789 by the first Catholic Bishop of the United States, is composed of four graduate and professional schools - Law, Medicine, Dentistry, and the Graduate School - and five Undergraduate Schools - the College of Arts and Sciences, the Schools of Foreign Service, Nursing, Business Administration, and Languages and Linguistics. At the present writing, Georgetown is a co-educational University of somewhat less than 10,000 students.

The Georgetown University address is: Washington, D.C. 20057.
The faculty expertise of George Washington University in water resources can be found in the departments below:

BIOLOGY DEPARTMENT
Mailing address: Reiss Science Bldg. 37th & 0 St. NW
Washington, D.C. 20057 (202) 687-6247

Donald Spoon Philip Sze

CHEMISTRY DEPARTMENT
Mailing address: Reiss Science Bldg. 37th & 0 St. NW
Washington, D.C. 20057 (202) 687-6073

Joseph E. Earley
The founding of Howard University can be traced back to a meeting of ten members of the First Congregational Society of Washington in November 1866. The Howard University is a predominantly minority institutional education system. It is one of the Historically Black Colleges and Universities.

Howard students, numbering approximately 12,500, come from all over the nation and more than 90 countries. The schools and colleges of the university are: College of Allied Health Services; School of Architecture and Planning; School of Business and Public Administration; School of Communications; College of Dentistry; Divinity School; School of Education; School of Engineering; College of Fine Arts; Graduate School of Arts and Sciences; School of Human Ecology; School of Law; College of Liberal Arts; College of Medicine; College of Nursing; College of Pharmacy and Pharmaceutical Sciences; School of Social Work.

The address is at: 2400 6th St. N.W. Washington, D.C. 20059.

The faculty expertise of Howard University in water resources can be found in the departments listed below:

CHEMICAL ENGINEERING DEPARTMENT
Mailing address: 2300 6th St, NW Washington, D.C. 20059
(202) 806-6624

Ramesh Chawla

CIVIL ENGINEERING DEPARTMENT
Mailing address: 2300 6th St. NW Washington, D.C. 20059
(202) 806-6570

James H. Johnson, Jr.
Irving W. Jones
Ahlam I. Shalaby

GEOLOGY & GEOGRAPHY DEPARTMENT
Mailing address: P.O. Box 1098 Washington, D.C. 20059
(202) 806-6926

Balaram Dey
The University of the District of Columbia resulted from the consolidation of the three institutions of higher education in the District of Columbia in 1976. These institutions were: the Federal City College, the D.C. Teachers College, and the Washington Technical Institute. UDC is predominantly minority institution. It is one of the Historically Black Colleges and Universities. It is the Land Grant University of the District of Columbia. UDC has five academic colleges: Business and Public Management; Education and Human Ecology; Liberal and Fine Arts; Life Sciences; and Physical Science, Engineering and Technology. It is located at: 4200 Connecticut Avenue, N.W. Washington, D.C. 20008.

The faculty expertise of UDC in water resources can be found in the departments listed below:

**BIOLOGY DEPARTMENT**

Mailing address: 4200 Connecticut Ave. NW, MB 0301
D.C. 20008
(202) 282-7364

Hariette L. Phelps
Gloria Wyche

**BUSINESS & PUBLIC MANAGEMENT DEPARTMENT**

Mailing address: 4340 Connecticut Ave. NW, Rm. 504
Washington, D.C. 20008
(202) 282-3718

Hossein Azani
Yearn H. Choi

**CHEMISTRY DEPARTMENT**

Mailing address: 4200 Connecticut Ave. NW, MB 0302
Washington, D.C. 20008
(202) 727-2712

David Blackman
George Eng
Isadora J. Posey
Clarence W. R.
CIVIL ENGINEERING DEPARTMENT

Mailing address:
4200 Connecticut Ave. NW, MB 4202
D.C. 20008
(202) 282-7349
Fred M. Chang Tony S.Yang

ENVIRONMENTAL SCIENCE DEPARTMENT

Mailing address:
4200 Connecticut Ave. NW, MB 4404
D.C. 20008
(202) 282-7370
Elhelu Mohamed A.
Victoria Guerrero.
Albert Jose Jones
Thomas Kakovitch
James O'Connor
James R. Preer
Allen H. Wilkins

FOOD SCIENCE DEPARTMENT

Mailing address:
4200 Connecticut Ave. NW, MB 4404
Washington, D.C. 20008
(202) 282-7380
Yuen-Sen Lee

MECHANICAL ENGINEERING DEPARTMENT

Mailing address:
4200 Connecticut Ave. NW, MB 4202
Washington, D.C. 20008
(202) 282-3500
Calvin Brooks

WATER RESOURCES RESEARCH CENTER

Mailing address:
4200 Connecticut Ave. N.W. MB 5004
Washington, D.C. 20008
(202) 673-3442
Fred Chang
George Eng
James Girard *
V. Guerrero
Leopold May *
Clarence Wade*
M.H. Watt
James Hannaham
Jutta Schneider
Mohamed Yusuf
Joseline Castanos
James O'Connor*

* Research Agreement with the D.C. Water Resources Research Center.
FACULTY INDEX

The index alphabetically lists each person mentioned in the directory and includes the person's title, address, telephone number and expertise. The page numbers beside each name tell you where to find more information on the person. The investigators recently involved in Center's projects are listed. Others are no longer affiliated with the Center or have left the universities they were faculty members. The information provided is extracted from the questionnaires, but key elements might have been missed. For more complete information, it is advisable to contact the faculty member/investigator.
ALEXANDER, Dr. Benjamin H.  pages: 2,5,6,7,8,9,20,
Research Professor
Chemistry Department
The American University
Mass. Ave. & Nebraska Ave. NW
Washington, D.C. 20016
(202) 526-3577
Fresh and salt water ecology.

AZANI, Dr. Hossein  pages: 10,11,12,15,16,18,26
Associate Professor
Business & Public Management
Department University of the District of Columbia
900 F St. NW
Washington, D.C. 20004 (202) 727-2700
Water resource planning; evaluation and control; public policy, cost/benefit analysis.

BACK, Dr. William  pages: 3,4,7,8,9,2
Adjunct Professor
Geology Department
George Washington University
Washington, D.C. 20052
(703) 648-5856
Hydrogeology; chemistry of water; regional flow systems; Karst hydrology.

BANTA, Dr. William C.  pages: 4,10,14,15,20
Professor
Biology Department
The American University
Washington, D.C. 20016
(202) 885-2181
Invertebrate zoology, especially of the Bryozoa. Also water chemistry, water quality, plankton.
BLACKMAN, Dr. David  
Professor, Chemistry Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 727-2280

Application of biochemical and molecular biological to problems of water quality.

BROOKS, Calvin  
Professor, Mechanical Engineering Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7349

Hydraulics systems; urban water problems.

CARESS, Dr. Edward Alan  
Professor  
Chemistry Department  
Academic Center, Room T212  
George Washington University  
Washington, D.C. 20052  
(202) 994-8086

Chemistry.

CARSON, Dr. Frederick W.  
Associate Professor  
Chemistry Department  
The American University  
Washington, D.C. 20016  
(202) 885-1750

Enzymatic analysis of nutrients.
CHANG, Dr. Fred F.M.  
Professor & Chairman  
Civil Engineering Department 4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7349

Hydraulics and hydrology, specialized in open channel flows and sedimentation/erosion.  
Highway drainage design.

CHAWLA, Dr. Ramesh C.  
pages: 5,6,7,8,9,10,15,16,25  
Associate Professor  
Chemical Engineering Department Howard University  
2400 6th St. NW Washington, D.C. 20059 (202) 636-6625

Disinfection of drinking water; chemistry and kinetics of chlorination; formation and removal of trihalomethanes in water; water conservation and management in industrial use; industrial wastewater treatment, recycle, and reuse; removal of organic pollutants from water via inert gas stripping and carbon adsorption.

CHEH, Dr. Albert  
pages: 6,7,8,9,10,20  
Associate Professor  
Chemistry Department  
The American University  
Washington, D.C. 20016 (202) 885-1772

Detection, quantification and identification of chlorine disinfection by products.

CHOI, Dr. Yearn  
Pages: 6,7,8,9,10,11,12,14,15,16,26  
Professor  
Business & Public Management  
Department University of the District of Columbia  
Washington, D.C. 20008  
(202) 727-2700

Public policy; environmental quality; Clean Water Act.
DEY, Dr. Balaram
Professor
Department of Physics & History
Howard University
Washington, D.C. 20059
(202) 636-6926/6925

Remote sensing, water resources.

EARLEY, Dr. Joseph E.
Professor & Chairman
Chemistry Department Georgetown
University 607 Reiss Bldg. Washington,
D.C. 20057 (202) 625-4065

Chromium chemistry; kinetics and mechanism of inorganic reactions in aqueous solutions
(especially chromium, titanium, ruthenium)

ELHELU, Dr. Mohammed
Professor
Environmental Science Dept.
University of the District of Columbia
4200 Connecticut Ave. NW,
Washington, D.C. 20008
(202) 282-7370
Water quality management and protection; hazardous and toxic wastes; heavy metals.

ENG, Dr. George
Professor
Chemistry Department
University of the District of Columbia
1321 H St. NW
Washington, D.C. 20008
(202) 727-2280
Water chemistry; fate of Organotin pollutants.
GILHEANEY, Dr. John J.  
Chairman  
Mechanical Engineering Department  
The Catholic University  
Washington, D.C. 20064  
(202) 319-5170  
Ocean acoustics, oceanography.

GIRARD, Dr. James E.  
Professor & Chairman  
Chemistry Department  
The American University  
Washington, D.C. 20016  
(202) 686-5514  
Separation and quantification of inorganic ions in water; ion chromatography.

GUERRERO, Dr. Victoria  
Professor  
Environmental Science Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7380  
Biology; water quality; wildlife biology; parasitology; ecology; eco-system.

HANNAHAM, Mr. James  
Deputy Director  
DC Water Resources Research Center  
The University of the District of Columbia  
4200 Connecticut Ave., N.W. MB 5004  
Washington, D.C. 20008  
(202) 673-3443  
Policy and planning, technology transfer, oceanography.
HAQUE, Dr. Muhammad I.  
Associate Professor  
Department of civil, Mechanical, and  
Environmental Engineering.  
George Washington University  
The Academic Center  
801 22nd St. NW, Suite T717  
Washington, D.C. 20052  
(202) 994-6749  
Computational hydraulics, finite element method, hydraulic structures, hydraulic, hydraulic  
machinery, fluvial hydraulics.

HOLMAN, Dr. Mary A.  
Professor  
Economics Department  
George Washington University  
Washington, D.C. 20052 (202) 676-6156  
Economic policy.

HUFFORD, Dr. Terry L.  
Associate Professor  
Biological Sciences Department George Washington University 2029 G St. NW  
Washington, D.C. 20052 (202) 676-6989  
Effect of pollutants on aquatic microflora; evaluation of water quality through diatom  
community analysis; algal identification and establishment of baseline algal flora.

J

JERNIGAN, R. W.  
Professor  
Statistics Department  
Mathematics & Statistics Department The American University Washington, D.C. 20016  
(202) 885-3100  
Water resource and eutrophication models.
JOHNSON, Dr. James H., Jr.  
Professor & Chairman  
Civil Engineering Department Howard University  
2300 6th St. NW Washington, D.C. 20059 (202) 636-6570  

Wastewater treatment, sludge treatment and disposal and hazardous waste treatment and management. Specifically interested in solid-liquid separation processes.

JONES, Dr. Albert Josh  
Professor of Marine Science  
Envi. Science Dept. University of D.C.  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-3078  

Aquaculture; marine sciences; environmental microbiology; fisheries; recirculation of water sources used in agriculture and fish farming; estuaries; Anacostia River studies; international marine resources; scuba diving.

JONES, Dr. Irving W.  
Professor  
Civil Engineering Dept.  
Howard University  
2300 6th St. NW  
Washington, D.C. 20059  
(202) 636-6395  
Engineering works.

KAKOVITCH, Thomas  
Associate Professor  
Environmental Science Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7371  
Fluid flow; water system design.
KAO, Dr. Timothy W.  
Professor & Chairman  
Civil Engineering Department  
The Catholic University  
Washington, D.C. 20064  
(202) 319-5163  
Stratified flow; coastal and estuarine circulation and pollution transport. Geophysical fluid dynamics. Hydraulics.

KNOWLTON, Dr. Robert E.  
Associate Professor  
Biological Sciences Department  
George Washington University  
Washington, D.C. 20052  
(202) 994-6093  
Analysis of effects of environmental factors (including pollutants) on decapod crustacea (especially larvae).

LEE, Dr. Yuen-Sen,  
Associate Professor  
Food Science Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7373  
Heavy metals and fish contamination.

LEVINSON, Dr. Nanette S.  
Associate Professor  
School of International Services  
The American University  
Washington, D.C. 20016  
(202) 686-2513  
Knowledge and technology transfer; policy issues.
LIEBER, Dr. Harvey
Associate Professor
School of Public Affairs Department of Public Administration
The American University
4400 Massachusetts Ave. NW
Washington, D.C. 20016
(202) 885-6235
Management, administration and institutional aspects of water quality and toxic substances.

LOGAN, Dr. William
Assistant Professor
Department of Geology
The George Washington University
Washington, D.C. 20052
(202) 994-0112
Ground water-Surface water interaction, wetland hydrogeology, regional coastal flow systems, water-rock interaction, saltwater intrusion.

MAHMOOD, Dr. Khalid
Professor of Engineering
Civil, Mechanical & Environmental Engineering Dept. Director
International Center Resources Institute
The George Washington University
The Academic Center, Rm. T720
Washington, D.C. 20052
(202) 994-3793
Mechanics of sandbed channels; reservoir sedimentation; unsteady flow in open channels; sedimentation engineering; mathematical modeling.

MAY, Dr. Leopold
Professor
Chemistry Department
The Catholic University of America
Washington, D.C. 20064
(202) 319-5392
Fate of Tributyltin in compounds in sediments and water using spectroscopy.
MEIJER, Dr. Paul H. E.  
Professor Emeritus  
Physics Department  
The Catholic University of America  
Washington, D.C. 20064  
(202) 319-5315  
Water-models; theory and physical properties of water.

MERCHANT, Dr. Henry  
Associate Professor  
Biological Sciences Department  
The George Washington University  
Washington, D.C. 20052  
(202) 676-7123  
Effects of water quality of organisms; effects of the iota upon water quality.

MONTASER, Dr. Akbar  
Associate Professor  
Chemistry Department  
George Washington University  
Washington, D.C. 20052  
(202) 994-6480  
Trace analysis of water with inductively complete plasma-atomic emission spectroscopy and mass spectrometry.

N

NARDONE, Dr. Roland M.  
Professor  
Biology Department  
The Catholic University of America  
Washington, D.C. 20064  
(202) 319-5275  
In vitro toxicity testing, especially neurotoxicity.
O'CONNOR, James V.  
Assoc. Prof. of Geoscience  
Environmental Science Department  
University of the District of Columbia  
4200 Connecticut Ave. MB 44-04  
Washington, D.C. 20008  
(202) 282-7380  
Urban ground water regime investigations; landform evolution along the fall zone; Anacostia drainage basin restoration; Potomac Valley history; coastal and urban geology.

OCRAN, Kwamena  
Assistant Professor  
Civil Engineering Dept.  
Howard University  
2300 6th ST., NW.  
Washington, D.C. 20059  
health, ecological effects, environmental assessments, heavy metals, pesticides in water and soil.

PACKER, Dr. Randall K.  
Professor & Chairman  
Biological Sciences Department  
George Washington University  
Washington, D.C. 20052  
(202) 676-6977  
Physiological effects of environmental pollutants on aquatic vertebrates, especially fish.

PAO, Dr. Hsien-Ping  
Professor  
Civil Engineering Department  
The Catholic University of America  
Washington, D.C. 20064  
(202) 319-5163  
Fluid mechanics, density stratified flows, thermal plumes, ground water flows, selective withdrawal in lakes and reservoirs.
PERROS, Dr. Theodore P. 
Professor
Chemistry Department
George Washington University
Washington, D.C. 20052
(202) 994-6120
Chemistry of surface and ground waters.

PHELPS, Dr. Hariette L. 
Professor
Biology Department
University of the District of Columbia
4200 Connecticut Ave. NW
Washington, D.C. 20008
(202) 727-2744
Pollution in estuarine and marine ecosystems, with special reference to toxics and their impact on shellfish and aquaculture.

POSEY, Dr. Isadora J. 
Professor
Chemistry Department
University of the District of Columbia
Washington, D.C. 20008
(202) 727-2280
Nature and extent of transformation which antifoulant organotin compounds undergo in water systems.

PREER, Dr. James R. 
Professor & Chairman
Environmental Science Department
University of the District of Columbia
Washington, D.C. 20008
(202) 282-7370
Heavy metals analysis; land application of sludge - heavy metal uptake by plants; chemical analysis of water quality.
REICH, Dr. Melvin
Professor
Microbiology Department
George Washington University
Medical Center
2399 Eye St. NW
Washington, D.C. 20037
(202) 676-2907

Water purification (anti-microbial).

REITZE, Arnold W.
Professor & Director of the Environmental Law Program
School of Law
George Washington University
Washington, D.C. 20052
(202) 676-6908

Water law; water pollution.

RICHARDSON, Dr. John M., Jr.
Professor
School of International Service
The American University
Washington, D.C. 20016
(202) 885-1600

Computer modeling/simulation; freshwater lakes.

S

SCHMIDT, William E.
Professor
Chemistry Department
George Washington University Washington, D.C. 20052
(202) 994-6719

Chemistry, groundwater, heavy metals.
SCHNEIDER, Ms. Jutta
Research Associate
DC Water Resources Research Center
The University of the District of Columbia
4200 Connecticut Ave., N.W. MB 5004
Washington, D.C. 20008
(202) 673-3443
Watershed management, groundwater and surface water, quality and quantity, pollution sources, human impacts and management.

SHALABY, Ahlam I.
Assistant Professor
Civil Engineering Department
Howard University
Washington, D.C. 20059
(202) 636-6624
Fluid mechanics, groundwater hydrology, computer modeling.

SIEGEL, Dr. Frederic R.
Professor
Geology Department Bell Hall
Rm. B02 2029 G St. NW
Washington, D.C. 20052
(202) 676-6194
Geochemistry; geology, water and health; land-use planning; wastes (industrial, agricultural, domestic).

SIEGENTHALER, Dr. Jurg K.
Professor
Sociology Department
The American University McCabe Hall 221
Washington, D.C. 20016
(202) 585-1429
Water management (use of water resources, prevention of water damages, and anti-water pollution measures) in the course of industrialization; methodologies in this area, especially long-term assessment.

SPOON, Dr. Donald
Assistant Professor
Biology Department
Georgetown University
Washington, D.C. 20057
(202) 625-4236
Aufwuchs (periphyton) community of the Potomac River.
SZE, Philip  
Associate Professor  
Biology Department  
Georgetown University  
Washington, D.C. 20057  
(202) 687-5828  
Ecology of algae.

V

VITERITO, Dr. Arthur  
Assistant Professor  
Geography Department  
George Washington University  
Washington, D.C. 20052  
(202) 676-3966  
Area measurement of precipitation, evapotranspiration models.

VERMEER, Dr. Donald E.  
Professor & Chairman  
Department of Geography & Regional Science  
George Washington University  
Washington, D.C. 2005  
(202) 994-6185  
Water resources, precipitation, livestock management in sahalian West Africa.

W

WADE, Dr. Clarence W. K.  
Professor  
Chemistry Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 727-2280  
Identification of pollutants; toxic and hazardous wastes; transport of pollutants; fate of pollutants; grants, contracts, and research act allotments.
WATERS, Dr. Robert C. page: 11,12,23
Professor & Chairman
Engineering Management
George Washington University
Washington, D.C. 20052
(202) 994-7409
Economics of water projects.

WATT, Dr. Hame M. pages: 3,5,6,10,11,12,14,15,16,17,18,28
Director
Water Resources Research Center
University of the District of Columbia
4200 Connecticut Ave. NW MB 5004
Washington, D.C. 20008
(202) 673-3442
Fluid mechanics; hydraulics; water conservation; water resources planning; renewable energy resources; international development; ground water; education; training; grants.

WILKINS, Allen. pages: 3,4,27
Associate Professor
Environmental Science Department
University of the District of Columbia
4200 Connecticut Ave. NW
Washington, D.C. 20008
(202) 282-7380
Water quality; urban non-point sources.

WRATHALL, Dr. C. Richard pages: 10,16,17,20
Associate Professor
Biology Department
The American University
Washington, D.C. 20016 (202) 475-9395
Marine sediments; chemical and microbiological pollution; sewage, dredge material disposal.

WYCHE, Dr. Gloria pages: 2,26
Professor
Biology Department
University of the District of Columbia
4200 Connecticut Ave. NW
Washington, D.C. 20008
(202) 282-7364
YANG, Dr. Tony T. S.  
Professor & Chairman  
Civil Engineering Department  
University of the District of Columbia  
4200 Connecticut Ave. NW  
Washington, D.C. 20008  
(202) 282-7349  
Engineering related areas, including design of dams, culverts and channels; water treatment and distribution.

YOUNG, Dr. G. Kenneth  
Adjunct Professor  
Civil Engineering Department  
The Catholic University of America  
Washington, D.C. 20064  
Computer analysis and optimization applied to mathematical models of hydrologic, hydraulic, meteorologic, and environmental system.
DIRECTORY UPDATE FORM

Please, use the following form for any additions or corrections to the Directory.
UNIVERSITY WATER EXPERTISE DIRECTORY
DISTRICT OF COLUMBIA

Date:..................
Name:..................................................
Title:.................................
Department:..........................................
University/College:...............................
Address:............................................
Telephone:.....................
Water related expertise/ interests

Please highlight your interests related to any aspect of water listed on the attached pages (2 and 3) of this form. We realize that it may be difficult to summarize your work in a short statement, but space is limited. Your statement may slightly be edited for format consistency.

Please indicate other colleagues/ faculty members who should be included, and their university affiliation.

Please also complete the next pages. Thank you!

Return to:
Dr. H. M. Watt, Director
DC Water Resources Research Center, MB 5004 4200 Connecticut Ave. N.W.
Washington, D.C. 20008 Tel. (202) 673-3442

Kindly check the category or categories of your expertise.

01 NATURE OF WATER

[ ] A Properties of Water

[ ] B Aqueous Solutions and Suspensions
## 02 WATER CYCLE

- A General
- B Precipitation
- C Snow, Ice, and Frost
- D Evaporation and Transpiration
- E Streamflow and Runoff
- F Groundwater
- G Water in Soils
- H Lakes
- I Water in Plants
- J Erosion and Sedimentation
- K Chemical Processes
- L Estuaries
- M Nutrient Cycling

## 03 WATER SUPPLY AUGMENTATION AND CONSERVATION

- A Saline Water Conservation
- B Water Yield Improvement
- C Use of Water of Impaired Quality
- D Conservation in Domestic and Municipal use
- E Conservation in Industrial Use
- F Conservation in agricultural Use

## 04 WATER QUANTITY MANAGEMENT AND CONTROL

- A Control of Water on the Surface
- B Groundwater Management
- C Effects of water of Mans' Non-water Activities
- D Watershed protection

## 05 WATER QUALITY MANAGEMENT AND PROTECTION

- A Identification of Pollutants
- B Heavy Metals
- C Toxic and Hazardous Wastes
- D Sources of Pollution
- E Transport of Pollutants
- F Fate of Pollutants
- G Effects of Pollution
- H Environmental Acidification
- I Waste Treatment Processes
- J Ultimate Disposal of Wastes
- K Water Purification
- L Water Treatment and Distribution
- M Water Quality Control
- N agricultural Waste Management
- O Non-Point Source Pollution Control
06 WATER RESOURCES PLANNING

[ ] A Techniques of Planning
[ ] B Evaluation Process
[ ] C Cost allocation, Cost Sharing, pricing/Repayment
[ ] D Water Demand
[ ] E Water Law and Institutions
[ ] F Nonstructural Alternatives
[ ] G Ecologic Impact of Water Development

07 RESOURCES DATA

[ ] A Network Design
[ ] B Data Acquisition

08 ENGINEERING WORKS

[ ] A Structures
[ ] B Hydraulics
[ ] C Hydraulic Machinery
[ ] D Soils Mechanics
[ ] E Rock Mechanics and Geology
[ ] F Concrete
[ ] G Materials
[ ] H Rapid Excavation
[ ] I Fisheries Engineering

09 MANPOWER, GRANTS, AND FACILITIES

[ ] A Education - intramural
[ ] B Education - In-house
[ ] C Research Facilities
[ ] D Grants, Contracts, and Research Act Allotments

10 SCIENTIFIC AND TECHNICAL INFORMATION

[ ] A Acquisition and Processing
[ ] B Reference and Retrieval
[ ] C Knowledge Transfer
[ ] D Secondary Publication and Distribution
[ ] E Specialized Information Center Services
[ ] F Translations
[ ] G Preparation of Reviews

11 INTERNATIONAL

[ ] A Engineering
[ ] B Socio/Economic
[ ] C Legal
[ ] D Other (Specify)