

HENRIETA DULAIIOVA

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EDUCATION

WOODS HOLE OCEANOGRAPHIC INSTITUTION
DEPARTMENT OF MARINE CHEMISTRY AND GEOCHEMISTRY
Postdoctoral Scholar, Postdoctoral Investigator

WOODS HOLE, MASSACHUSETTS, USA
2005-present

FLORIDA STATE UNIVERSITY, DEPARTMENT OF OCEANOGRAPHY
Ph.D. in Chemical Oceanography

TALLAHASSEE, FLORIDA, USA
2000 - 2005

Dissertation Thesis: Multiple Isotopic Tracers for Study of Coastal Hydrological Processes

CZECH TECHNICAL UNIVERSITY
FACULTY OF NUCLEAR SCIENCES AND PHYSICAL ENGINEERING
Master of Sciences in Nuclear Chemistry

PRAGUE, CZECH REPUBLIC
1992 - 1997

Thesis: Determination of Uranium by Gamma-Spectrometry

CZECH TECHNICAL UNIVERSITY
MASARYK INSTITUTE OF ADVANCED STUDIES

PRAGUE, CZECH REPUBLIC
1994 - 1996

Certificate in Pedagogy for Teachers of Technically Oriented Subjects

APPOINTMENTS

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Postdoctoral Scholar, Postdoctoral Investigator

WOODS HOLE, MASSACHUSETTS, USA
2005 - present

FLORIDA STATE UNIVERSITY, DEPARTMENT OF OCEANOGRAPHY
Graduate Research Assistant

TALLAHASSEE, FLORIDA, USA
2000 - 2005

NATIONAL RADIATION PROTECTION INSTITUTE
Specialist - Radiochemistry Group

PRAGUE, CZECH REPUBLIC
1997 - 2000

Research focus: Determination of Actinides in Biological and Environmental Samples

CZECH TECHNICAL UNIVERSITY
FACULTY OF NUCLEAR SCIENCES AND PHYSICAL ENGINEERING
Graduate Research Assistant

PRAGUE, CZECH REPUBLIC
1995 - 1997

AWARDS

- WHOI Postdoctoral Scholar Award, 2005
- NOAA NERR Graduate Research Fellowship Award, 2003
- AGU Student Travel Grant, 2003
- IUGG Travel Grant, 2003
- FSU Department of Oceanography Outstanding Graduate Student for the 2002-2003 Academic Year
- Florida State University - Czech Technical University exchange student with full tuition waiver, 2000-2005
- Maray Sandor Foundation Award for outstanding college students, 1994

PUBLICATIONS

- Dulaiiova, H. and W. C. Burnett, Evaluation of the flushing rates of Apalachicola Bay, Florida via natural geochemical tracers, *Marine Chemistry*, in press.

- ❑ Gonnea, M. E., P. J. Morris, H. Dulaiova, and M. A. Charette New perspectives on radium behavior within a subterranean estuary, *Marine Chemistry*, in press.
- ❑ Garcia-Solsona, E., J. Garcia-Orellana, P. Masqué, and H. Dulaiova, Uncertainties associated with ^{223}Ra and ^{224}Ra measurements in water via a Delayed Coincidence Counter (RaDeCC), *Marine Chemistry*, in press.
- ❑ Dimova, N, H. Dulaiova, G. Kim, and W. C. Burnett, Uncertainties in the preparation of ^{224}Ra Mn fiber standards. *Marine Chemistry*, in press.
- ❑ Burnett, W. C., N. Dimova, H. Dulaiova, D. Lane-Smith, B. Parsa, and Z. Szabo. Measuring Thoron (^{220}Rn) in natural waters. In: Environmental Radiochemical Analysis. Royal Chemistry Society, UK, in press.
- ❑ Taniguchi, M., W. C. Burnett, H. Dulaiova, F. Siringan, J. Foronda, G. Wattayakorn, S. Rungsupa, E. A. Kontar, and T. Ishitobi, 2008. Groundwater discharge as an important land-sea pathway into Manila Bay, Philippines, *Journal of Coastal Research*, 24(1A).
- ❑ Burnett, W. C., G. Wattayakorn, M. Taniguchi, H. Dulaiova, P. Sojisuorn, S. Rungsupa, T. Ishitobi, 2007. Groundwater derived nutrient inputs to the Upper Gulf of Thailand, *Continental Shelf Research*, 2(15), 176-190.
- ❑ Dulaiova, H. and W. C. Burnett, 2006. Radon loss across the water-air interface (Gulf of Thailand) estimated experimentally from ^{222}Rn - ^{224}Ra , *Geophys. Res. Lett.*, 33, L05606, doi:10.1029/2005GL025023.
- ❑ Dulaiova, H., W. C. Burnett, G. Wattayakorn, and P. Sojisuorn, 2006. Are Groundwater Inputs into River-Dominated Areas Important? The Chao Phraya River – Gulf of Thailand, *Limnology & Oceanography*, 51(5), 2232-2247.
- ❑ Burnett, W. C. and H. Dulaiova, 2006. Radon as a Tracer of Submarine Groundwater Discharge into a Boat Basin in Donnalucata, Sicily, *Continental Shelf Research* 26(7), 862-873.
- ❑ Taniguchi, M., W. C. Burnett, H. Dulaiova, E. A. Kontar, P. P. Povinec, and W. S. Moore, 2006. Submarine groundwater discharge measured by seepage meters in Sicilian coastal waters, *Continental Shelf Research* 26(7), 835-842.
- ❑ Dulaiova, H., W. C. Burnett, J. P. Chanton, W. S. Moore. H. J. Bokuniewicz, M. A. Charette, and E. Sholkovitz, 2006. Assessment of Submarine Groundwater Discharges into West Neck Bay, New York, via Natural Tracers, *Continental Shelf Research*, 26(16), 1971-1983.
- ❑ Povinec, P. P., P. K. Aggarwal. A. Aureli, W. C. Burnett, E. A. Kontar, K. M. Kulkarni, W. S. Moore, R. Rajar, M. Taniguchi, J.-F. Comanducci, G. Cusimano, H. Dulaiova, L. Gatto, M. Groening, S. Hausser, I. Levy-Palomo, B. Oregioni, Y. R. Ozorovich, A. M. G. Privitera, M. A. Schiavo, 2006. Characterisation of submarine groundwater discharge offshore south-eastern Sicily, *Journal of Environmental Radioactivity*, 89(1), 81-101.
- ❑ Burnett, W. C., H. Dulaiova, C. Stringer, and R. Peterson, 2006. Submarine Groundwater Discharge: Its Measurement and Influence on the Coastal Zone, *Journal of Coastal Research* Special Issue 39, 35-38.
- ❑ Dulaiova, H., R. Peterson, W. C. Burnett, and D.-L. Smith, 2005. A Multi-Detector Continuous Monitor for Assessment of ^{222}Rn in the Coastal Ocean, *Journal of Radioanalytical and Nuclear Chemistry* 263 (2), 361-365.
- ❑ Swarzenski, P., W. C. Burnett, C. Reich, H. Dulaiova, R. Peterson, and J. Meunier, 2004. Novel Geophysical and Geochemical Techniques Used to Study Submarine Groundwater Discharge in Biscayne Bay, Florida, *USGS Fact Sheet* 2004-3117.
- ❑ Dulaiova, H. and W. C. Burnett, 2004. An Efficient Method for Gamma Spectrometric Determination of Radium-226, 228 via Manganese Fibers, *Limnology & Oceanography: Methods* 2, 256-261.
- ❑ Burnett, W. C., and H. Dulaiova, 2003. Estimating the Dynamics of Groundwater Input into the Coastal Zone via Continuous Radon-222 Measurements, *Journal of Environmental Radioactivity* 69 (1-2), 21-35.
- ❑ Chanton, J. P., W. C. Burnett, H. Dulaiova, D. R. Corbett, and M. Taniguchi, 2003. Seepage Rate Variability in Florida Bay Driven by Atlantic Tidal Height, *Biogeochemistry* 66, 187-202.
- ❑ Lane-Smith, D. R., W. C. Burnett, and H. Dulaiova, 2002. Continuous Radon-222 Measurements in the Coastal Zone, *Sea Technology* October 2002, 37-45.
- ❑ Kim, G., W. C. Burnett, H. Dulaiova, P. W. Swarzenski, and W. S. Moore 2001. Measurement of ^{224}Ra and ^{226}Ra Activities in Natural Waters Using a Radon-in-Air Monitor, *Environmental Science & Technology* 35, 4680-4683.
- ❑ Dulaiova, H., G. Kim, W. C. Burnett and E. P. Horwitz, 2001. Separation and Analysis of Am and Pu from Large Soil and Sediment Samples, *Radioactivity & Radiochemistry* 12 (3), 4-15.

PAPERS IN REVIEW

- Dulaiova, H., Gonnessa, M. E., P. B. Henderson, and M. A. Charette, Geochemical and physical sources of radon variation in a subterranean estuary - Implications for radon groundwater end-member activities in submarine groundwater discharge studies, submitted to *Marine Chemistry*.

CONFERENCE PRESENTATIONS

ESTUARINE RESEARCH FEDERATION MEETING

PROVIDENCE, RI, USA NOVEMBER 2007

- H. Dulaiova: Groundwater Seepage from Subterranean to Surface Estuaries – Examples from Geochemical Tracer Surveys. **Invited speaker.**

ASLO 2007 AQUATIC SCIENCES MEETING

SANTA FE, NM, USA FEBRUARY 2007

- H. Dulaiova, M. Charette, G. B. Mitchell, C. Measures, P. Henderson, R. Supcharoen, and D. Biller: Natural iron fertilization in the Southern Ocean: Investigating horizontal iron transport and vertical carbon flux using radium isotopes and Thorium-234.

52ND ANNUAL RADIOBIOASSAY & RADIOCHEMICAL MEASUREMENTS CONFERENCE

CHICAGO, IL, USA October 2006

- H. Dulaiova and A. Sanchez Ribalta: Radon and thoron measurement in water using a novel membrane contactor and radon-in-air monitor

WORKSHOP ON MEASUREMENTS OF SHORT-LIVED RADIUM ISOTOPES USING THE RADECC DELAYED COINCIDENCE SYSTEM

MONACO, October 2006

- H. Dulaiova: Utility of ^{224}Ra , ^{223}Ra and ^{222}Rn to characterize pore water exchange in salt marshes

GORDON RESEARCH CONFERENCE: PERMEABLE SEDIMENTS

COLBY COLLEGE, ME, USA June 2006

- *Poster:* H. Dulaiova, W. C. Burnett, G. Wattayakorn, and P. Sojisuporn: Are Groundwater Inputs into River-Dominated Areas Important?

51ST ANNUAL RADIOBIOASSAY & RADIOCHEMICAL MEASUREMENTS CONFERENCE

STATELINE, NV, USA October 2005

- H. Dulaiova: The Advantage of the Use of Low Background Gamma-spectrometry for Counting ^{226}Ra and ^{228}Ra in Natural Waters

50TH ANNUAL CONFERENCE ON BIOASSAY, ANALYTICAL AND ENVIRONMENTAL RADIOCHEMISTRY

CINCINNATI, OH, USA November 2004

- H. Dulaiova, W. C. Burnett, and N. Dimova: High Concentrations of Radon and Thoron Discovered in Public Water Supplies

49TH ANNUAL RADIOBIOASSAY & RADIOCHEMICAL MEASUREMENTS CONFERENCE

JACKSON, WY, USA October 2003

- H. Dulaiova and W. C. Burnett: Determination of Radium Isotopes in Natural Waters using MnO_2 -Coated Fiber and Gamma Spectrometry

SIXTH INTERNATIONAL SYMPOSIUM & EXHIBITION ON ENVIRONMENTAL CONTAMINATION IN CENTRAL & EASTERN EUROPE AND THE COMMONWEALTH OF INDEPENDENT STATES

PRAGUE, CZECH REPUBLIC September 2003

- *Poster:* H. Dulaiova and W. C. Burnett: Evaluation of Water Residence Times in Embayments via Natural Radium Isotopes

CONFERENCE ORGANIZER AND STUDENT POSTER SESSION JURY

2003 IUGG GENERAL ASSEMBLY

SAPPORO, JAPAN July 2003

- H. Dulaiova, W. C. Burnett, W. S. Moore and H. Bokuniewicz: Groundwater Discharge and Mixing Estimates in West Neck Bay, Shelter Island, NY via Isotopic Approaches

AGU STUDENT TRAVEL GRANT AND IUGG TRAVEL GRANT RECIPIENT

48TH RADIOBIOASSAY & RADIOCHEMICAL MEASUREMENTS CONFERENCE

KNOXVILLE, TN, USA November 2002

- H. Dulaiova, D. Lane-Smith, R. Peterson and W. C. Burnett: Improved Continuous Radon Measurements for Coastal Waters

14TH RADIOCHEMICAL CONFERENCE

MARIANSKE LAZNE, CZECH REPUBLIC April 2002

- H. Dulaiova, W. C. Burnett: Improved Measurement of Radium Isotopes at Low Concentrations in Natural Waters

47TH ANNUAL RADIOCHEMICAL MEASUREMENTS CONFERENCE

HONOLULU, HI, USA November 2001

- H. Dulaiova, G. Kim, W. C. Burnett: Measurement of ²²⁴Ra and ²²⁶Ra Activities in Natural Waters Using a Radon-in-Air Monitor

EICHROM TECHNOLOGIES, INC. NORTH AMERICAN USERS' GROUP WORKSHOP

KNOXVILLE, TN, USA May 2001

- H. Dulaiova, G. Kim, W. C. Burnett, E. P. Horwitz: Analysis of Actinide Elements from Large Samples

IRPA CONGRESS ON RADIATION PROTECTION IN CENTRAL EUROPE

BUDAPEST, HUNGARY, August 1999

- Poster:* H. Dulaiova, V. Beckova, I. Bucina: Determination of Americium by Extraction Chromatography in Urine Samples

13TH NATIONAL SEMINAR ABOUT SEPARATION CHEMISTRY

LAZNE BOHDANEC, CZECH REPUBLIC, June 1999

- H. Dulaiova: Review of Methods for the Determination of ²⁴¹Am in Excretion Analysis

FIELD TRIPS AND CRUISES

MAUI

HAWAII, USA

UH&WHOI

March 2007

- Assessment of groundwater nutrient inputs and their effect on the occurrence of algal blooms

SOUTHERN OCEAN

ANTARCTICA

R/V YUZHMOREGEOLOGIYA

January-February 2006

- Study of naturally abundant radioisotopes to investigate organic carbon export (U-Th disequilibrium) and sources of iron (Ra isotopes) to the naturally iron fertilized region of the Southern Drake Passage.

WAQUOIT BAY, PLUM ISLAND SOUND, PAMET RIVER

MASSACHUSETTS, USA

2006, 2007

- Seasonal study of groundwater discharge and pore water exchange and associated nutrient fluxes

KONA COAST

HAWAII, USA

FSU&UH&USGS

August 2005

- Assessment of Groundwater Inputs into Coastal Waters of Hawaii via Natural Tracers and Aerial Imagery

MANILA BAY

PHILIPPINES, ASIA

APN Project

January 2005

- Groundwater Discharge as an Important Land-Sea Pathway in Southeast Asia

GULF OF THAILAND AND CHAO-PHRAYA ESTUARY

THAILAND, ASIA

R/V CHULA VIJAI

January & July 2004

START Project

- Contribution of Carbon and Nutrient Species into SE Asian Waters via Submarine Groundwater Discharge

PENNSGROVE AND FLORENCE TOWNSHIPS, NJ & ESCAMBIA COUNTY, FL **NEW JERSEY AND FLORIDA , USA**
 Investigation of natural radioactivity in public water supplies **April & May 2004**

BISCAYNE BAY AND LOXAHATCHEE RIVER **FLORIDA, USA**
USGS Project **June 2004**
 Using Novel Geophysical and Geochemical Techniques to Study Submarine Groundwater Discharge

SICILY **ITALY, EUROPE**
IAEA, CRP Project **April 2002**
 Nuclear and Isotopic Techniques for the Characterization of Submarine Groundwater Discharge in Coastal Zones

WEST NECK BAY **SHELTER ISLAND, NY, USA**
IOC, IHP, SCOR, LOICZ Project **May 2002**
 Assessment and Management Implications of Submarine Groundwater Discharge Into the Coastal Zone

APALACHICOLA BAY **FLORIDA, USA**
NOAA NERR Graduate Research Fellowship **2003-2005**
 Evaluation of Flushing Rates of Estuaries and Embayments via Natural Geochemical Tracers

GULF OF MEXICO: APALACHEE BAY, SARASOTA BAY & FLORIDA KEYS **FLORIDA, USA**
 Geochemical Tracer Studies **2000-2004**

FSU MARINE LABORATORY, TURKEY POINT **FLORIDA, USA**
SCOR, LOICZ Project **August 2000**
 Assessing Methodologies for Measuring Groundwater Discharge to the Ocean

INTERNSHIPS

BUDAPEST EOTVOS LORAND UNIVERSITY **BUDAPEST, HUNGARY**
Institute of Nuclear Techniques **January 1999**
 Analyses of actinides in water samples from the nuclear power plant at Paks

MEDITERRANEAN INTERNATIONAL UNIVERSITY **NARBONNE, FRANCE**
Summer School **August 1998**
 Environmental protection and chemistry

TECHNICAL UNIVERSITY DELFT **DELFT, NETHERLANDS**
Interfaculty Reactor Institute **April 1997**
 Instrumental Neutron Activation Analysis (BISNIS)

NUCLEAR POWER PLANT TEMELIN **TEMELIN, CZECH REPUBLIC**
Department of Analytical Chemistry **July 1996**
 NPP reactor cooling water analysis (AAS, HPLC)

PROFESSIONAL SOCIETY AND OTHER MEMBERSHIPS

- American Geophysical Union
- American Society of Limnology and Oceanography
- WHOI Postdoctoral Association (elected member 2006-2007)
- American Association for the Advancement of Science

GRANTS

- ❑ NSF OCE-CO: Sources of Iron to the Eastern Tropical Atlantic: Does the Continental Margin Supplement Saharan Dust? PIs: P. J. Lam, H. Dulaiova, and K. O. Buesseler.
Funding period: Sep 2007 – Aug 2010.
- ❑ MIT Sea Grant: Development of a Radon/Nitrate mapping system for a large scale assessment of submarine groundwater discharge and non-point source pollution to coastal waters. PIs: H. Dulaiova and M. A. Charette.
Funding period: Mar 2007 – Feb 2009.
- ❑ WHOI Coastal Ocean Institute: Development of a Radon/Methane/Nitrate mapping system for a large scale assessment of submarine groundwater discharge and non-point source pollution in the coastal zone. PIs: H. Dulaiova, M. Charette, and R. Camilli. Funding period: Jun 2006 – May 2008.
- ❑ NOAA National Estuarine Research Reserve System Graduate Research Fellowship: Evaluation of Flushing Rates of Estuaries and Embayments via Natural Geochemical Tracers. PIs: H. Dulaiova and W. C. Burnett,
Funding period: Jun 2003 – May 2005.
- ❑ NSF OCE-CO: Collaborative Research: GEOTRACES: Intercalibration Exercise for Radium Isotopes in Seawater. PIs: M. A. Charette, W. S. Moore, H. Dulaiova.

PENDING PROPOSALS

- ❑ NSF OCE-CO: Collaborative Research: Benthic carbon and nutrient inputs to the coastal ocean: The interplay between groundwater discharge and biogeochemistry in permeable shelf sediments. PIs: A. Rao, H. Dulaiova, M. A. Charette, W. S. Moore.

SYNERGISTIC ACTIVITIES

Dr. Dulaiova has supervised undergraduate and graduate research assistants, participated in high school outreach programs, served as a judge in the Tallahassee Regional Science Fair and Falmouth High Schools Science Fair, second year in a row helped organizing the Waquoit Bay Watershed Block Party – an outreach program of the Waquoit Bay National Estuarine Research Reserve, MA for the public. She supervised and mentored a high school summer student (2006) and an REU fellow (2007) at WHOI. Recently, she served as a reviewer for the following journals: *Marine Chemistry*, *Limnology and Oceanography*, *Limnology and Oceanography: Methods*, *Journal of Hydrology*, *Journal of Oceanography*, *Water Resources Research*, *Estuarine, Coastal and Shelf Science*, and *Geophysical Research Letters*.