

9/11/2009

Curriculum Vitae

**Key words:** Marine and Freshwater bacteria, *Archaea*, Genomics, New Microbial Taxa, Quorum Signaling in Biofilms, Human Genetics and Genomics

**Name:** Svetlana V. Kotelnikova

**Permanent Address:** St. George, Grenada, West Indies,

**Official Address:** Box P.O. 7 Department of Microbiology, St. George's University, School of Medicine, St. George, Grenada, West Indies, phone 001 437 444 4357 ext. 2316, E-mail SKotelnikova@sgu.edu

**Birthdate:** November 9, 1962

**Birthplace:** Russia, Southern Ural, Zlatoust

**Current position:** Associate Professor at the Department of Microbiology, School of Medicine, St. George's University

Adjunct Professor at the School of Veterinary Studies , St. George's University

**Family status:** Married to Peter Giesler, Swedish, borne in 1965, with three children, Anna (student, International economics and linguistics, Germany), Sergey (student, electrical engineering, Sweden) and Robin (High School Student in Sweden)

**Foreign languages:** English, Swedish, Russian, Esperanto

**Driving license:** type B

**Education:**

1970-1980 – school and high school, student

1980-1985 Department of Biology, Nignij Novgorod State University, undergraduate

1988-1994 Institute of Biochemistry and Physiology of Microorganisms, post-graduate

1994-1996 Department of Marine and General Microbiology, Gothenburg University, post-doctoral fellowship and post-graduate studies

2000-2001 Department of organic and inorganic chemistry, Chalmers Technical University, Institute of Zoology, Botanical Institute, Ecology and Evolution, Marine Biology, Gothenburg University, Sweden

2000-2001 College Teacher of Biological Sciences and Chemistry, Pedagogue, Institute of Education, Gothenburg University

### **Academic degrees:**

**B.A.** 1984 “Effect of oxygen on enzymes of energy metabolism from *Methylomonas methanica*” Institute of Biochemistry and Physiology of Microorganisms,

**M.S.** 1985 “ Respiration of hydrogen-oxidizing bacteria “ Institute of Biophysics of Siberian Academy of Science

**June 1985 Diploma** awarded for Biologist and Teacher of Biology and Chemistry in Russian

**Ph.D.** 1994 “Taxonomy of Methanotrophic *Archaea* of Genera *Methanobacterium* and *Methanosarcina*” Institute of Biochemistry and Physiology of Microorganisms, Pushchino, Moscow region, Russian Academy of Science

**B.A.** 2001 Teaching of Biological Sciences and Chemistry in Swedish

**Postdoctoral fellowship** 1994-1996 “Deep hydrogen-based biosphere” Göteborgs Universitet, Microbiologi, Cell och Molekular Biologi Institution, Medicinargatan 9C, Box 462, 405 30 Göteborg Telephone: 031 773 25 65, Fax 46 31 773 25 99

**Independent Research** 1996-2000, Microbial reduction of oxygen in deep indigenous groundwaters, Swedish Nuclear Fuel and Waste Management Co, Department of Microbiology, Cell and Molecular Biology Institute, Gothenburg University

2000-2001 Microbial corrosion and interaction with polymers, Department of Microbiology, Cell and Molecular Biology Institute, Gothenburg University

2001-2005 Antagonistic compounds from marine microorganisms, Aquatic bacteriology and public health, New taxa of *Vibrio*, *Rachnella* **and** *Serratia* producing signaling and anti-microbial compounds

**Professional affiliation and activities:**

*Membership:*

American Society of Microbiology (USA)

Society for General Microbiology (Europe)

Employment

1985-1988 Research assistant, Institute of Biochemistry and Physiology of Microorganisms, Pushchino, Moscow region

1988-1994 Research associate, Institute of Biochemistry and Physiology of Microorganisms, Pushchino, Moscow region

1994-1996 Postdoctoral fellowship, Gothenburg University

1996-2001 Researcher and lector, Department of Microbiology, Institute of Cell and Molecular Biology, Gothenburg University

Nuclear Power Waste Company (Svensk Kärnkraftavfall Bolag, SKB)

2001 currently Associate Professor in Microbiology and Genetics

Department of Microbiology, St. George's University

**Research interests:**

I have professional experience in different fields of microbiology, mainly in microbial ecology, taxonomy, biochemistry and physiology of microorganisms in crystalline rocks and hydrothermal vents. I have worked in the fields of microbial decontamination of the environment, identification and taxonomy of strict anaerobic bacteria and geomicrobiology of deep subsurface for 14 years. Part of my research interests concentrates on the isolation of pure cultures of the hardly cultivable anaerobic microorganisms, their physiology and biochemistry, chemotaxonomy and

genosystematic of methanogenic *Archaea*, sulphate-reducing and acetogenic *Bacteria*. I began my scientific career working with enzymatic characterization of oxygen-limited *Methylomonas methanica* in the laboratory of Methylophony of the G. K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, in Russia. I then continued with research on the enzymes of the electron transport chain of hydrogen-oxidizing bacteria in the Institute of Biophysics of the Siberian Academy of Science, in Russia. I then studied mechanisms of microbial pesticide degradation, worked with strict anaerobic methanogenic *Archaea* and sulphate-reducing *Bacteria* in the Russian Bacterial Culture Collection of the Russian Academy of Science, where I isolated and characterized 3 new species and 6 new strains of methanogens. In that time it was a new research area with developing microbiological techniques. I studied the cell wall composition, biochemistry, physiology and phylogeny of thermophilic methane-producing *Archaea*, including my own isolates from Far-East hydrothermal vents. Her interests during this period of time were connected to mechanisms of thermophilicity, properties of strict anaerobic methanogens, diversity and evolution of Archaeal forms. After I defended my PhD thesis (February, 1994) titled "Systematics of thermophilic *Archaea* of genera *Methanobacterium* and *Methanosarcina*", I moved to the Deep Biosphere Laboratory, Gothenburg (September, 1994) as postdoctoral researcher.

I began the work with microbiology of deep igneous rock aquifers at Äspö Hard Rock laboratory, in Sweden. Äspö Hard Rock laboratory project is multi-disciplinary project and directed towards the understanding of using hard rock as a site for final disposal of high radioactive waste. The support from geological, geochemical and hydrological research was important for my microbial ecology research. Although this research aimed at the applied task of safe disposal of radioactive waste, most of the research I performed had a very basic nature. This is because nothing was known about subterranean homoacetogens and methanogens, interaction of homoacetogenesis and methanogenesis in deep crystalline bedrock before I started my research. The initial questions have been raised: Are homoacetogens and methanogens present in the oligotrophic deep granitic aquifers? Are they active? Which environmental factors do affect their distribution and diversity? May methanogenic *Archaea* and homoacetogenic *Bacteria* initiate a chain of organic carbon production in the anoxic and organic poor subsurface? I developed molecular biology tools for retrieving the archaeal genes from the environment, sampling and cultivation methods for anaerobic organisms from the deep subsurface. I have found both methane and hydrogen dissolved in the deep granitic groundwater. First known granitic methanogens were isolated and characterized. My findings revealed the existence of an unknown microbial interaction between homoacetogens and acetoclastic methanogens, which is an evidence for hydrogen driven deep biosphere. The deep subterranean biosphere is driven by the energy available in hydrogen and carbon in calcites.

Later on I continued my scientific career as leader of the research project funded by the Swedish Nuclear Waste Company (SKB). The Microbe-REX project dealt with microbial oxygen consumption in the deep granitic subsurface. The chemical modeling showed that iron minerals in the rock matrix and reducing components in the bentonite will consume the introduced oxygen within 300 years. However, I found evidence for the concept that methanotrophic, hydrogen-oxidising and heterotrophic bacteria reduce oxygen with methane, hydrogen and organic carbon. The scenario changes dramatically- oxygen is gone within days or maximum months. A series of experiments have been performed during this period of time concerning inorganic and organic (microbial) reduction of oxygen. The results confirmed the hypothesis and showed that there is a strong microbial oxygen reduction potential in the underground fractures. A model for microbial oxygen consumption in the groundwater was developed and applied.

During this period of time I have done basic research aiming presence and activity of methanotrophic bacteria in the deep subsurface. Methanotrophs are present wherever there is methane in the groundwater. Methane-utilising bacteria were studied in granitic aquifers at depths from 70 to 700 m below surface (in Sweden and Finland) with respect to their presence, distribution, diversity, activity and oxygen consuming potential. New species of methanotrophs unique and highly adapted to the deep subsurface have been discovered.

Later I was responsible for microbiological part of the International Redox *in situ* experiment in detailed scale (SKB). Most important is the fact that oxygen would induce aerobic microbial respiration and succession of microbial groups both in the groundwater and on mineral surfaces (diorite biofilms). The numbers of cells attached as biofilms inside the *in situ* REX system exceeded the numbers of free-living cells. The development of biofilms would potentially lead to change of absorbing properties of the mineral surfaces that alter sorption of radionuclides, which eventually may leak from the repository. Biofilms would potentially harbour aerobic, microaerophilic and anaerobic microorganisms, promoting both oxygen respiration and development of the reduced species. Empirical model and results of the inhibiting experiment *in situ* suggested that attached and unattached organisms could be responsible for the oxygen uptake observed under *in situ* conditions in the deep granitic aquifers.

Simultaneously I have participated in the International expedition to East Drinefontain Gold mines in South Africa, funded by the National Geographic Society. The expedition was successful. The Witwatersrand gold mining levels at Western Deep Levels Inc. (South Africa) are the deepest in the world (3500 meters below surface, 60°C). The most productive "reef" was a thin organic-rich layer, called the Carbon Leader, which also contains high uranium concentrations. I hypothesized that the extremely high

uranium concentrations in the organic rich layers containing the gold cause radiolysis of water to H<sub>2</sub> and O<sub>2</sub>. Methane and hydrogen occur frequently in the mines. Our results of most probable number, radiotracer experiments and enrichment cultures showed that methane and hydrogen were consumed by microbes both in the presence and absence of oxygen. I proposed the presence of syntrophic consortia of hydrogen-producing methanotrophs and anaerobic organisms respiring sulphate, ferric iron and/or manganese thereby able to oxidize methane under anoxic conditions. My results indicated that methane and hydrogen may contribute to the organic carbon production of the ultradeep system, constituting the energy base of subterranean microbial ecosystems.

During the time when I have been working in Sweden I have gained experience of the project planning, coordination, working in team, coworking with microbiologists and geologists from USA, France, England, Russia and Switzerland. I have developed communicative abilities in English and Swedish. I have learned to work on applied and basic research area in parallel way. During this time I have participated numerous International Symposia on: Evolution of microorganisms (Warwick, England, 1996), Microbial Ecology, (Halifax, Canada, 1998), Environmental biogeochemistry (Toronto, Canada, 1999), Subsurface Microbiology (Davos, Switzerland, 1996, and Vail, Colorado, USA, 1999). I have also participated in project meetings (Nottingham, England 1996, 1997, Marseille, France, 1998, Åspö, 1999, Stockholm, Sweden 1999).

Currently my research is associated with Graduate Research Program of St George's School of Medicine and WINDREF in Grenada. (see the list of recent reports published). I was excited to be a part of this new developing graduate program and very happy to be a driving force using my experience and scientific curiosity in the field of microbiology associated with diverse bacterial and archaeal communities in such unique environments like hot iron springs, volcano lake, deep biofilms and coral reef animals. The capacity of bacteria associated with biofilms in the environments listed above is tendency to produce unique biological compounds while possessing unique physiology which might facilitate the use theses of these organisms in biotechnology without cloning or genetic transformations. This is an approach, which is alternative to metagenomics. We are seeking for anti-microbial and anti-fouling, anti-biofilm producing cultivable bacteria, then we identify the producers to define the optimal physiological conditions for the production. In the mean time, we are discovering new unknown organisms. On the other side, I have established Environmental Testing Unit based at the Department of Microbiology, serving SGU and funded by SGU for drinking water and coastal water regular testing and quality assurance. This service is also useful for disaster management and preparedness. I supervise a team of 5 people,

which are serving as a great resource not only for SGU community but also for graduate research in Microbiology and Public Health.

Future scientific development is linked with my vision of archaeal organisms associated with marine water and coral reefs. They are representing more than 30% of the community in according representation of 16S rRNA genes, however there is not a single one that was cultured. These organisms represent a distinct domain, so we can expect a very distinct biochemical activity. They may be thriving in symbiotic associations which will create an additional challenge for their culturing in the laboratory.

#### *Research awards (last several years)*

George Soros's Science Foundation, Moscow, 1994, 5 000 US

Swedish Institute 120 000 SEK

Swedish Nuclear Fuel and waste management CO., Microbial consumption of oxygen in Äspö environments, 1996-1998, 500 000 SEK

Swedish Nuclear Fuel and waste management CO., Microbial effects on oxygen reduction in REX in situ experiment, 1998-1999, 800 000 SEK

Stiftelsen Lars Hiertas Minne Microbial systems in deep groundwater. 1998, 40 000 SEK

Magnus Bergvalls Stiftelse (MBS) Life bonds: thermophilic methane- and hydrogen related microorganisms in Ultradeep Environment close to the Earth core. 1998, 50 000

National geographic Foundation (USA) Whitewatersrand Microbiology project, 1998, 10 000 SEK

Just a drop, (UK) , Providing safe drinking water to the community, 30 000 GP

#### **Teaching experience**

As a post-doctoral researcher, I have gained experience in teaching by being lecture in inorganic and organic chemistry in a Swedish gymnasium (high school) in 2000; environmental microbiology and biochemistry of strict anaerobic microorganisms at Gothenburg University (1996-2000), supervising diploma and post-graduate students (1994-2000), consulting and educating engineers and geochemists from Swedish Nuclear Waste Management company and other relevant organizations (ANDRA, France, PNC, Japan, British Geological Survey, England) and participating the

International projects. I started as assistant professor at SGU, Department of Microbiology in August 2001 and since then have been teaching students on undergraduate and graduate levels in Medical Microbiology, Microbial Genetics, Marine Microbiology, Research Methods and Human Genetics for pre-medical and pre-veterinary students. Research supervisor of number (5) of MD/MSC, DVM/Msc and free-standing Msc research students (see details in SGU Teaching Portfolio and the list of publications below). I have been serving as Faculty Advisor for more than 88 medical students and 65 premedical students.

### **Methods used and skills:**

Cell culture maintenance, spectroscopic measurements of enzymatic activities, DNA-DNA re-association, electrophoresis of proteins, indirect immuno-fluorescence, isolation and chemical analysis of cell walls, determination of G+C content in DNA, gas chromatography of fatty acids and environmental gases, determination of physiological parameters of bacterial growth, light and UV microscopy, microphotography, preparation of cells for electron microscopy, comparable numeric analysis, most probable numbering of viable microorganisms, microbial sensitivity to antimicrobial agents and poisons, PCR, genomic transformation, cloning, DNA sequencing (chain termination method with radioactive and fluorescent label, DNA extraction and purification, primer design, molecular 16S rRNA probe technique, analytic chemistry of gases and low molecular compounds (for instance, methane, hydrogen, carbon dioxide, helium, acetate, formate, sulfide, ferric and ferrous iron), non-stable radioisotope labeling techniques, labeled gas-trapping. Computer – Microsoft WINDOWS 98, LINUX editors, DOS-editors (Word 5.0, 6.0), Plotting in UNIX, DOS and Microsoft Windows Systems: GC Star Analysis system, GC MS, Microsoft EXCEL, Graph program FigP, GCG packet for 16S rRNA data base interaction, Reference program GETAREF and ENDNOTES, programs for genomic sequence comparisons FASTA, BLAST in f.e. GenBank, sequence submission SEQUIN, and evolutionary trees building (ARB). The methods have been used for studying of the following objects: anaerobic and aerobic geochemical microbial processes and competent organisms in natural environments, biochemistry, immunology, molecular taxonomy, microbial ecology, radio-nucleotide distribution by microorganisms, degradation of pollutants in subsurface and identification of agents responsible for the process, methane related processes and microorganisms, hydrogen-oxidizing bacteria, subsurface microbiology, microbial physiology, structure of microbial communities, microbial aerobic and anaerobic

respiration, growth kinetic, modeling of microbial growth and oxygen respiration in subsurface, sun-independent microbial communities, extra-terrestrial organisms metabolism types.

I am routine user of number of educational and communication tools such as Microsoft Power Point, Quick Place, ANGEL, and LOTUS NOTUS.

### **List of essential publications in English:**

#### **P- Reviewing of papers:**

1. Peer-review written by **Dr. Kotelnikova, S.**, Manuscript id es 034061j, Environmental Science and Technology. Title: Temporal variation of methane oxidation in a carex freshwater marsh in Sanjiang Plain, China. Authors: Weixin Ding, Zukong Cai, Haruo Tsuruta, Xiaoping Li. The Peer-review was required by journal of Environmental Science and Technology 06.03.2003
2. Peer-review written by **Dr. Kotelnikova, S.**, Manuscript id: FEMSEC-0211-0711, Title: Microbiology of formation waters from the deep repository of liquid radioactive wastes Severnyi. Authors: Tamara Nazina, Inessa Kosareva, Vladimir Petrunyaka, Margarita Savushkina, Evgeniy Kudriavtsev, Valeriy Lebedev, Viktor Ahunov, Yuriy Revenko, Robert Khafizov, George Osipov, Sergey Belyaev, Mikhail Ivanov. The peer-review was required by: FEMS Microbiology Ecology 17.04.2003.
3. Peer-review written by **Dr. Kotelnikova, S.** “*Archeoglobus fulgidus* and *Thermotoga elfii*: are they two common inhabitants of the deep biosphere?” The peer-review was required by editor of the Journal of Geomicrobiology, 20.03.2006

#### **Reviews:**

**Kotelnikova S. and Pedersen K.** 1997 Evidence for methanogenic *Archaea* and homoacetogenic Bacteria in deep granite rock aquifers, FEMS Microbiology Reviews. 20, 339-349.

**Kotelnikova S.** Microbial production and oxidation of methane in the deep subsurface. 2002 Earth Science Review, 58/3, pp. 367-395.

## **P-reviewed full Articles:**

**Laurinavichus K.S., Kotelnikova S.V., Obrazsova A.Ya.** New species of thermophilic methane-producing bacteria. *Microbiology translated from Russian* 1988. V.57. N. P. 832-838.

**Scherbakova V.A., Kotelnikova S.V., Navoa M.-K., Obrazsova A.Ya., Kruz M., Laurinavichus K.S., Akimenko V.K.** Physiological properties of thermophilic *Methanosarcina* isolated from active sludge of anaerobic digests. *Microbiology translated from Russian* 1991. V.60. P.325-329.

**Kotelnikova S.V., A.Y. Obraztsova, K.-H. Blotevogel, I.N.Popov** Taxonomic analysis of thermophilic strains of the genus *Methanobacterium*. Reclassification of *Methanobacterium thermoalcaliphilum* as a synonym of *Methanobacterium thermoautotrophicum*. *Int. J.Syst. Bacteriol.* 1993. V.43. N 3. P.591-596.

**Kotelnikova S.V., Lysanskaja V.Y., Obraztsova A.Y.** Glycine in the cell walls of thermophilic *Methanobacterium* strains. *Microbiology translated from Russian.* 1993. V.62 N5, P.572-573.

**Kotelnikova S. V., A.Y. Obraztsova, G. M. Gongadze, K. S. Laurinavichus.** *Methanobacterium thermoflexum* sp. nov. and *Methanobacterium defluvii* sp. nov., thermophilic rod-shaped methanogens isolated from anaerobic digester sludge. *System. and Appl. Microbiol.* 1993. V.16. N 3. P.427-435.

**Kotelnikova S. and K. Pedersen.** Distribution and activity of methanogens and acetogens in deep granite rock in Äspö Hard Rock Laboratory, Sweden. *FEMS Microbiology Ecology*, 1998, 26:121-134

**Kotelnikova S., A.J.L. Macario and K. Pedersen** *Methanobacterium subterraneum*, a new alcalophilic, eurythermic and halophilic methanogen isolated from a deep granitic groundwater. *Int. J. System. Bacteriol. IJSB*, 1998, 48: 357-367

**Kotelnikova S. Kaluzhnaya, M.G., Khemelina, V. N., Trotsenko, Yu and Pedersen K.** Methane oxidation in deep igneous groundwaters. *Microbial Ecology*, 2002, in press.

**Kotelnikova S. Pedersen K.** : Microbial oxygen consumption in the Deep Igneous Rock Ground Water, 2002 FEMS Microbiology Ecology, submitted

**Kaluzhnaya, M.G. Khemelina, V. N. Kotelnikova\* S.V. Holmquist, L. Pedersen K. Trotsenko Yu.** 1999. *Methylomonas scandinavica* sp. nov, a New Methanotrophic Psychrotrophic Bacterium isolated from Deep Igneous Rock Ground Water of Sweden. Systematic and Applied Microbiology, 22,1999, p. 565-572

[I. PUIGDOMENECH](#), L. TROTIGNON, S. KOTELNIKOVA, [K. PEDERSEN](#), L. GRIFFAULT, V. MICHAUD, J.-E. LARTIGUE, K. HAMA, H. YOSHIDA, J.M. WEST, K. BATEMAN, A.E. MILODOWSKI, S.A. BANWART, J. RIVAS PEREZ, AND E.-L. TULLBORG, 1999, Oxygen Consumption in a granitic environment. Manuscript. Scientific Basis for Nuclear Waste Management

**Kotelnikova S.** Microbial succession in response to oxygenation of deep granitic aquifer. SAME-8 8-th Symposium on aquatic microbial ecology, Taormina, Sicily, 25-30 October 2002, pp.15, L8

**Kotelnikova S.** Microbial production and oxidation of methane in deep subsurface. Earth-Science reviews, 2002, 367-395.

**C. Bruno and Kotelnikova S.** Prevention of fouling by reef fish microflora, ASM symposium Biofilms 2003, Victoria, Canada, p.45

**C. Bruno and Kotelnikova S.** Anti-biofilm forming properties and diversity of probiotic microflora of coral reef fish *Sparisoma ninida*. Proceedings of Caribbean Research Council, 2004, Grenada.

**Davis S. and Kotelnikova S.** Microorganisms isolated from marine and freshwater environments in Grenada, West Indies. Proceedings of Caribbean Research Council, 2004, Grenada, manuscript

**Giesler, P. Lennon D., Pensick A., and S. Kotelnikova.** Monitoring of recreational aquatic environments in Grenada, West Indies. Proceedings of Caribbean Research Council, 2004, Grenada, manuscript

**Svetlana Kotelnikova, Nicholas Caputo , Cynthia Bruno, Eugene Martin and Karsten Pedersen,** 2006. *Vibrio salinivivax* sp. nov., sp. an extreme halophilic marine bacterium isolated from biofilm on the bottom of marine bay sea in Grenada. IJSEM, International Journal of Systematic and Evolutionary Microbiology, manuscript

**S/. Kotelnikova.** [Microbial production and oxidation of methane in deep subsurface](#) Virtual Journal of Geobiology, Volume 1, Issue 2, October 2002, pp.367-395.  
[http://earth.elsevier.com/geobiology/archive/1\\_2.htm](http://earth.elsevier.com/geobiology/archive/1_2.htm)

## **Chapter in Books:**

**Kotelnikova S.V., Novoa M.- L., Obraztsova A.Y., Laurinavichus , Akimenko V.K.**

Characterization of thermophilic *Methanocarsina* isolated from sewage sludge in Lubertsy and Havana. in book "Bioconvercion - 88" Riga. 1988. P.64.

Culture catalogue of All-Russian Microorganisms collection. Moscow-Pushchino, VINITI. 1992.

Microbes in Motion. 1996. Educational software. Pictures of *Methanobacterium subterraneum* and others subsurface Archaea.

The Procaryotae. The 3rd edition Edit: Dr. David R. Boone, Portland State University, under edition.

## **Reports:**

**Kotelnikova S.V. and Pedersen K.** Anaerobic bacteria in the Äspö tunnel, Sweden and Palmottu, Finland. In SKB Quaternary Report, Stockholm, April 1995, p.13-20

**Kotelnikova S.V. and Pedersen K.** Microbial oxygen consumption in Äspö tunnel environments. Progress report HRL 98-11. Swedish, Nuclear Power Fuel and waste Co (SKB), Stockholm 1998, pp 1-98.

**Kotelnikova S.V. and Pedersen K.** Microbe-REX project: microbial oxygen consumption in the Äspö tunnel, SKB Technical Report 98-17, 1999. p. 1-75

**Puigdomenech I., Banwart S.A., Bateman K., Milodovski A.E., West J.M., Grifault L., Gustafsson E., Hama K., Yoshida H., Kotelnikova S., Pedersen K., Lartique J.-E., Michaud V., Trotignon L., Morosini M., Rivas Perez J. and Tullborg E.-L.** SKB-ICR-99-01. 1999, Swedish Nuclear Fuel and Waste Management Co, Stockholm. pp 1-120.

**Kotelnikova S. and Pedersen K.** Microbial oxygen consumption during *in situ* field experiment. SKB International progress report. 2000, Swedish Nuclear Fuel and Waste Management Co, Stockholm. pp 1-66.

**Puigdomenech, I., Gustafsson, E., Kotelnikova, S., Morosini, M., Pedersen, K., and Tullborg, E.-L.** (1999) In-situ Determination of O<sub>2</sub> Depletion by Geologic Media: The Redox Experiment in Detailed Scale (REX). SKB Technical Report, 1999

**Moser D, Onstott T.C, Pfiffner S, Kotelnikova S, Peacock A, Phelps T, Deflaun M, Hoek J, Ghirose W.C, Colwell F, Kift T, Reysenbach A.-L, Fredrickson J.K, Southam G, , Slater G, Omar G, Pratt L, Boone D, Pedersen K. and Sher W.** The Witwatersrand Deep Microbiology project: A Window into the extreme environment of deep subsurface microbial communities. Project Status report, 1999, p.1-78.

**Catalogue of strain 2001** DSMZ -Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Braunschweig, Germany. 2001 List of Microbial Species: Methanobacterium sp. (Archaea), pp. 5-6

[www.gbf-braunschweig.de/dsmz/species/sp303872.htm](http://www.gbf-braunschweig.de/dsmz/species/sp303872.htm)

**Kotelnikova S.** Respiration of iron and manganese by anaerobic methane-oxidizing microorganisms in Witwatersrand Gold Mines at depth of 3.1 km. Project report for Magnus Bergvalls Stiftelse (MBS) Life and Stiftelsen Lars Hiertas Minne. Sweden, 2001, pp. 1-45.

**E. Davis and Kotelnikova S.** Caribbean Environmental Research Initiative. Monitoring of recreational aquatic environments in Grenada. In WINDREF Annual Report, St Georges University, Grenada 2003, p .29-32

**C. Bruno and S Kotelnikova.** Antagonistic properties of reef fish microflora. In WINDREF Annual Report, St Georges University, Grenada 2003, p .32-34.

**Kotelnikova S.** CERI and Grenada Cooperative Nutmeg Association activities. In WINDREF Annual Report, St Georges University, Grenada 2003, p .34-37.

**Kotelnikova S.** Iron-oxidizing microorganisms in St. Andrew Hot Springs in Grenada. In WINDREF Annual Report, St Georges University, Grenada 2003, p .37-39.

**Caputo N and S. Kotelnikova.** Novel Antibiotics from Tropical Marine Environment. In WINDREF Annual Report, St Georges University, Grenada 2003, p .28-29.

**V. Zxeltkov and S. Kotelnikova. Sulfate-reducing bacteria in oxidised freshwater of tropical mangroves.** In WINDREF Annual Report, St Georges University, Grenada 2004, pp. 14-16

**Davis S. and Kotelnikova S.** Gram-negative bacteria from aquatic environments of Grenada (61.4W and 12.0 N), West Indies. In WINDREF Annual Report, St Georges University, Grenada 2004, pp.20-24

**Kotelnikova S.** Identification of bacteria producing antagonistic compounds isolated from marine biofilms of Grenada. In WINDREF Annual Report, St Georges University, Grenada 2004, p .24-25.

**Kotelnikova S.** Post-Hurricane water surveillance in problematic areas of Grenada. In WINDREF Annual Report, St Georges University, Grenada 2004, p. 27-31

**Kotelnikova S.** SGU Environmental Testing Unit (ETU) established and supervised by CERI. In WINDREF Annual Report, St Georges University, Grenada 2004, p. 25-27

**Kotelnikova S and T. Chao.** Water quality assessment and potential health risks at Apres Tout. Grenada. Project Report to Just a Drop, St George's University, 2005, pp.1-40

**Varicheva. Y, Bhamarasetty. B, Birungi. J. and S. Kotelnikova.** Phenotypic characterization of antibiotic –producing organisms from the bottom of the sea, Grenada, West Indies. Report, Pre-medical research program, St George's University, 2005, pp.1-73.

**Thirath Chau, Shakeera James and Svetlana Kotelnikova.** Summer 2005 - Apres Tout Water Project. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 30-33.

**Varicheva. Y, Bhamarasetty. B, Birungi. J. and S. Kotelnikova.** New Species Isolated from the Bottom of the Sea, Grenada, West Indies. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 33-43.

**Rochard Daniel, Smith Jaime and Svetlana Kotelnikova.** The Antimicrobial Properties of the Nutmeg. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 44-46

**Bruno C and S. Kotelnikova.** Characterization of novel bacterial species and genera. In WINDREF Annual Report, St Georges University, Grenada 2005, p.47-50.

**Nicholas D. Caputo and S. Kotelnikova,** Novel Antimicrobial Compounds from Tropical Marine Environments. In WINDREF Annual Report, St Georges University, Grenada 2005, p.50-53.

**Marisa Nimrod, Michle Klug, Jessica Kramer, Mehran Massumi, Dawn Adams and S. Kotelnikova.** The Effect of Water Quality on the Students of St George's University. Grenada, 2005, 54-56.

**Kotelnikova, S., Hallback L., and K. Pedersen** "Fountain of Youth" in the Iron Springs in St. Andrews, Grenada: pre-investigation stage. Grenada: WINDREF Research Institute Annual Report 2006, pp. 23-27.

### **Presentations at meetings and Symposia:**

**Kotelnikova S. and K. Pedersen.** Evidences for the presence of homoacetogenic bacteria in deep granitic groundwater obtained with culturing, molecular and radioisotopic techniques. The 1996 International symposium on Subsurface Microbiology, Davos, Switzerland.

**Kotelnikova S.** Energy sources for microbial respiration of oxygen in granitic ground water. . REX project meeting,, November 1996, Nottingham, England

**Kotelnikova S.** Microbial reduction of oxygen in granitic ground water. REX project meeting, November 1997, Äspö, Sweden. The 1996 International symposium on Subsurface Microbiology, Davos, Switzerland.

**Kotelnikova S.** Modeling of microbial respiration during Microbe-REX project. REX project meeting, Äspö, 1998, Sweden. The 1996 International symposium on Subsurface Microbiology, Davos, Switzerland.

**Kotelnikova S.** Microbial respiration of oxygen in granitic ground water. REX project meeting, Chadarache, France, 1998

**Kotelnikova S.** Contribution of microbial biofilms to microbial respiration of oxygen in granitic ground water. REX project review meeting, October 1999, Stockholm, Sweden

**Kotelnikova S.V, Pedersen K, Moser D. and Onstott T.C.** The Witwatersrand Deep Microbiology project: methane and hydrogen dependent metal reduction. In Abstract Book of the 4th International Symposium on Subsurface Microbiology, August 22-27. Ghirso W (Ed) 1999, p 22. ASM, Vail, Colorado, USA.

**Kotelnikova S.** Response of microbial population to oxygenation of deep granitic groundwater during in situ experiment. 14-th International Symposium on Environmental Biogeochemistry. September 26-30, 1999, Hunsville, Ontario, Canada, pp.43.

**Kotelnikova S.** Microbial succession in response to oxygenation of deep granitic aquifer. SAME-8 8-th Symposium on aquatic microbial ecology, Taormina, Sicily, 25-30 October 2002, pp.15, L8

**Kotelnikova S.** Sulfate-reducing bacteria in mangroves and marine water. Panel of Research and scholarly activity , April, 7, 2005, Saint George University, Grenada, West Indies

**Kotelnikova S.** Coastal Recreational Waters in Grenada. Panel of Research and scholarly activity , April, 7, 2005, Sant George University, Grenada, West Indies

**Kotelnikova S.** Post-hurricane drinking water at SGU, Grenada. Panel of Research and scholarly activity, April, 7, 2005, Saint George University, Grenada, West Indies

**Kotelnikova S.** Identification of Bacteria producing antibiotics. Panel of Research and scholarly activity, April, 7, 2005, Saint George University, Grenada, West Indies

#### **Poster articles:**

Kotelnikova S. and Pedersen K. **Distribution and diversity of methanogens in deep granitic rocks in Southeastern Sweden. In Society for General Microbiology Abstract Booklet, 134-th Ordinary meeting, 25-29 March 1996. p.52**

**Kotelnikova S.V., Obrazcova A.Ya., Laurinavichus K.S., Akimenko V.K.** Characterization of a thermophilic rod-like methanogen. Comparative immunological and protein analysis of *Methanobacterium* genus. USSR-FRG Bilateral Symposium "Archaeobacteria" abstracts, Tbilisi, 1990, P.25.

**Kotelnikova S.V., Obraztsova A.Ya., Laurinavichus K.S., Gongadze G.M.** Isolation of new species of thermophilic methanogenic bacteria from the industrial digester. - "Thermophiles: science and technology.", Reykjavik, Iceland. 1992. P.72.

**Kotelnikova S. and K. Pedersen.** Evidences for the presence of homoacetogenic bacteria in deep granitic groundwater obtained with culturing, molecular and radioisotopic techniques. The 1996 International symposium on Subsurface Microbiology, Davos, Switzerland.

**Kotelnikova S. and K. Pedersen.** Evidences for the presence of homoacetogenic bacteria in deep granitic groundwater obtained with culturing, molecular and radioisotopic techniques. Program and Abstracts. The 1996 International symposium on Subsurface Microbiology, 1996, Davos, Switzerland, abstr. 149, pp.181.

**Kotelnikova S. and Pedersen K.** Isolation and characterization of methanogenic Archaea from subsurface groundwater at Äspö Hard Rock laboratory. Program and Abstracts. The 1996 International symposium on Subsurface Microbiology, 1996, Davos, Switzerland, abstr. 108, pp.144.

**Kotelnikova S. and Pedersen K.** Ecology of methanogenic Archaea in granitic groundwater from Äspö Hard Rock laboratory, Sweden. Program and Abstracts. The 1996 International symposium on Subsurface Microbiology, 1996, Davos, Switzerland, abstr. 51, pp.87.

**Kotelnikova, S.** Methanogenesis in deep granitic groundwater. 1996 The 134<sup>th</sup> SGM Meeting in Warwick, UK, 25-29 March 1996

**Kotelnikova S. Molleström C. and Pedersen K.** Methane-oxidizing bacteria in deep subsurface granitic aquifers. Eight International Symposium on Microbial Ecology, Halifax, Canada, August 9-14, 1998, p. 205

**Deflaun M.F, Kotelnikova S, Balkwill D, Streger S, Onstott T.C. and Moser D.** Metabolic diversity in ultra-deep groundwater. In Abstract Book of the 4th International Symposium on Subsurface Microbiology, August 22-27. Ghiorse W (Ed) 1999, p 36. ASM, Vail, Colorado, USA.

Onstott, T.C., Moser, D.P., Dong, H., Fredrickson, J.K., Brockman, F.J., Phelps, T.J., Pfiffner, S.M., Peacock, A., White, D.C., Macnaughton, S., Colwell, F.S., Balkwill, D.L., DeFlaun, M.F., Kieft, T., Boone, D.R., Reysenbach, A-L, Hoek, J., Omar, G.I., Ghiorse, W.C., Southam, G., Slater, G., Sherwood-Lollar, B., **Kotelnikova, S.**, Pedersen, K., Pratt, L.Fong, J., Baker, B., Wimpee, C., MacGregor, B., Fishbain, S., Stahl, D.A., Stute, M. and Hoover, R., 1999 The Witwatersrand Deep Microbiology Project: A Window Into the Extreme Environment of Deep Subsurface Microbial Communities, EOS abstr.

Moser, D., Onstott, T., Pfiffner, S, White, D.C., Peacock, A., Phelps, T., Deflaun, M., Hoek, J, Ghiorse, W.C., Colwell, F, Kieft, T, Reysenbach, A., Fredrickson, J.K., Southam, G., **Kotelnikova, S.**, Slater, G., Omar, G.I., Pratt, L., Boone, D., Pedersen, K., and sherwood-lollar, B. 1999, The Witwatersrand Deep Microbiology Project: A Window Into The Extreme Environment Of Deep Subsurface Microbial Communities: Abstract. International Society for Subsurface Microbiology, Vail Colorado.

Onstott, T.C., Moser D.P., Pfiffner S., White D.C., Peacock A., Phelps T.J., DeFlaun M., Hoek J., Ghiorse W., Colwell F.S., Kieft T.L., Reysenbach A-L, Fredrickson J.K., Southam G., **Kotelnikova S.**, Slater G., Omar, G., Pratt L., Boone D., Pedersen K., & Sherwood-Lollar B. 1999. The Witwatersrand Basin, S. Africa: Potential biogeochemical pathways and reaction rates. Abstract. International Society for Subsurface Microbiology, Vail Colorado

**Kotelnikova S. and Pedersen K.** Microbial respiration of oxygen in granitic ground water. In Abstract Book of the 4th International Symposium on Subsurface Microbiology, August 22-27. Ghirose W.C (Ed) 1999, p 81. ASM, Colorado, USA.

**Kotelnikova S.V, Pedersen K, Moser D. and Onstott T.C.** The Witwatersrand Deep Microbiology project: methane and hydrogen dependent metal reduction. In Abstract Book of the 4th International Symposium on Subsurface Microbiology, August 22-27. Ghirose W (Ed) 1999, p 22. ASM, Vail, Colorado, USA.

**Moser D, Onstott T.C, Pfiffner S, Peacock A, Phelps T, Deflaun M, Hoek J, Ghirose W.C, Colwell F, Kift T, Reysenbach A.-L, Fredrickson J.K, Southam G, Kotelnikova S, Slater G, Omar G, Pratt L, Boone D, Pedersen K. and Sher W.** The Witwatersrand Deep Microbiology project: A Window into the extreme environment of deep subsurface microbial communities. In Abstract Book of the 4th International Symposium on Subsurface Microbiology, August 22-27. Ghirose W.C (Ed) 1999, p 21. ASM, Colorado, USA.

**C. Bruno and Kotelnikova S.** Prevention of fouling by reef fish microflora, ASM Symposium Biofilms 2003, Victoria, Canada, p.45

**C. Bruno and Kotelnikova S.** Prevention of fouling by reef fish microflora. CRHC, 2004, Grenada, West Indies

**Bruno C and S. Kotelnikova** (2004) Probiotic network of protection on the surface of the reef fish. Poster Article. International symposium on Microbial Ecology, Cancun, Mexico, August 2004. Book of abstracts, P. 285.

### **Publications based on research performed at SGU for 2002/2008.**

#### **Peer-reviewed journals**

**Kotelnikova S.** Respiration of iron and manganese by anaerobic methane-oxidizing microorganisms in Whitewatersrand Gold Mines at depth of 3.1 km. Project report for Magnus Bergvalls Stiftelse (MBS) Life and Stiftelsen Lars Hiertas Minne. Sweden, 2001, pp. 1-45.

**Kotelnikova S.** Microbial production and oxidation of methane in deep subsurface. Earth-Science reviews, 2002, 367-395.

Bruno, C., **Kotelnikova, S.**, and K. Pedersen. (2008). *Aerococcus piscidermidis* sp. nov., a halotolerant, alkalitolerant marine bacterium isolated from *Sparisoma viridae* in Grenada. International Journal of Systematic and Evolutionary Microbiology (*IJSEM*) [accepted in May, 2008; IJSEM paper no. IJS/2008/001107]

Ludwig Niessen, Félicité Makamté Koutang, Michael Zapf, Kristian Fog Nielsen, **Svetlana Kotelnikova**, Matthias Lorenz, Rudi F. Vogel. Incidence of Potential Aflatoxin Producing Fungi During Nutmeg Production at the Island of Grenada and Application of Essential Oils as a Measure of Control. J. Natural Products, 2007., pp.45-55.

Bruno, C.K, **Kotelnikova, S.** and Karsten Pedersen. *Erythrobacter piscidermidis* sp. nov., a halotolerant, alkalitolerant marine bacterium isolated from *Sparisoma viridae* in Grenada. International Journal of Systematic and Evolutionary Microbiology (*IJSEM*) [accepted in May, 2008; IJSEM paper no. IJS/2008/001108], pp.1-13.

**Svetlana V. Kotelnikova**, Ravindra Naraine , Thomas Smith, Sara Jägevall , Lotta Hallbeck 5 and Karsten Pedersen. THE MICROBIAL DIVERSITY PRESENT IN A TROPICAL, CIRCUMNEUTRAL IRON SPRING IN GRENADA. The 16th CAS Biennial Conference on Science and Technology Conference Proceedings, pp.1-470.: Vehicles for Sustainable Economic Development in the Caribbean: Grenada; 11-13 October, 2008, pp.202-210.

**S. Kotelnikova**, T. Smith, B. Samuel, D. Garraway, S. Jägevall, R. Naraine and L. Hallbeck. LIGHT-DEPENDENT ELECTRON SHUFFLING IN IRON-OXIDIZING BIOFILM IN NEWLY DISCOVERED TROPICAL WARM SODA SPRING. The 16th CAS Biennial Conference on Science and Technology Conference Proceedings, pp.1-470.: Vehicles for Sustainable Economic Development in the Caribbean: Grenada; 11-13 October, 2008, pp.461-462.

J. Ashcroft; A. Qureshi; J. Rayner; **S. Kotelnikova** and D. Lennon. Antimicrobial peptides: a paradigm for novel chemotherapeutic agents. The 16th CAS Biennial Conference on Science and Technology Conference Proceedings, pp.1-470.: Vehicles for Sustainable Economic Development in the Caribbean: Grenada; 11-13 October, 2008, pp.211-217.

J. Ashcroft; A. Qureshi; J. Rayner; **S. Kotelnikova** and D. Lennon. Beneficial microbes: probiotics derived from the skin of *Eleutherodactylus johnstonei*. The 16th CAS Biennial Conference on Science and Technology Conference Proceedings, pp.1-

470.: Vehicles for Sustainable Economic Development in the Caribbean: Grenada; 11-13 October, 2008, pp. 218-223.

**Svetlana V. Kotelnikova**, Ryan J. McDonald, and L. Martin Eugene. Unusual Resistance of Marine *Vibrio* from Grenada to the Solar UV Radiation. The 16th CAS Biennial Conference on Science and Technology Conference Proceedings, pp.1-470.: Vehicles for Sustainable Economic Development in the Caribbean: Grenada; 11-13 October, 2008, pp. 267-274.

### **Conference presentations (2002-2008)**

**Kotelnikova S.** Microbial succession in response to oxygenation of deep granitic aquifer. SAME-8 8-th Symposium on aquatic microbial ecology, Taormina, Sicily, 25-30 October 2002, pp.15, L8

Bruno, C. and S. Kotelnikova. (2003). Antagonistic properties of microflora isolated from epithelial mucus of reef fish *ASM Biofilms 2003*, Victoria, Canada, p. 180.

Bruno, C. and S. Kotelnikova. (2004). Antagonistic properties of reef fish microflora *49-th Annual CHRC*, Grenada, West Indies, p. 82.

**Davis, S., Bruno, C., Singh, R., Kotelnikova, S. (2004) Gram-negative bacteria isolated from coastal recreational waters in Grenada Island (61W, 13N), West Indies.** Poster Article. International symposium on Microbial Ecology, Cancun, Mexico, August 2004. Book of abstracts, P.174, [www.kenes.com/isme](http://www.kenes.com/isme)

Bruno, C. and S. Kotelnikova. (2004). Probiotic network of protection on the surface of reef fish *ISME 10*, Cancun, Mexico, [www.kenes.com/isme](http://www.kenes.com/isme).

**Caputo, N D., and Kotelnikova, S. Novel antimicrobial producing microorganisms from Tropical marine environments.** Poster paper presented at joined meeting of the 3 divisions of the International Union of Microbiological Societies 2005. Book of abstracts XI International congress of bacteriology and Applied Microbiology. San Francisco, California, USA July 23-28, 2005, B-835, p.37, <http://www.abstractsonline.com/viewer/SearchResults.asp>

**Kotelnikova S., Caputo N.K., Bruno, C. Bhimarasetty. B., Varicheva, Y. E., Birungi, J., and Martin, E.L. New Species isolated from the bottom of the sea. Grenada, West Indies.** 11-th International Symposium on Microbial Ecology - ISME - 11. The hidden powers - microbial communities in action. Vienna 20-25, 2006. Book of Abstracts. [www.kenes.com/isme](http://www.kenes.com/isme), page 269 or <http://www.kenes.com/isme/program/search.asp>

R. Naraine; **S. Kotelnikova**, T. Smith S. Jägevall, L. Hallbeck & K. Pedersen. The Microbial Diversity Present in a Tropical, Circumneutral Iron Spring in Grenada. Journal of the Caribbean Academy of Sciences. October 11-13, 2008, Grenada, West Indies. Oral presentation/abstract.

**Kotelnikova, S.V.**, Ryan MacDonald, and Eugene L. Martin. Unusual resistance of marine *Vibrio* from Grenada to solar UV radiation. Proceedings of the Caribbean Academy of Sciences. October 11-13, 2008, Grenada, West Indies, oral presentation/abstract

**S. Kotelnikova**, T. Smith, B. Samuel, D. Garraway, S. Jägevall, R. Naraine and L. Hallbeck and K. Pedersen. Light-dependant electron shuffling in newly discovered tropical warm soda spring. The 12-th international Symposium on Microbial Ecology. Microbial diversity – sustaining the Blue Planet. August 17-22, 2008, Cairns, Australia, ISME-12, Abstract and Poster paper 1249

K. Pedersen, L. Hallbeck, S. Jägevall, and **S. Kotelnikova**. Variability in 16S rDNA and *in situ* growth conditions of cultured and uncultured strains within the autotrophic, iron-oxidizing genus *Gallionella*. The 12-th international Symposium on Microbial Ecology. Microbial diversity – sustaining the Blue Planet. August 17-22, 2008, Cairns, Australia, ISME-12, Abstract and Poster paper 1259

#### **WINDREF Annual reports and SGU Gazette publications.**

**E. Davis and Kotelnikova S.** Caribbean Environmental Research Initiative. Monitoring of recreational aquatic environments in Grenada. In WINDREF Annual Report, St Georges University, Grenada 2003, p .29-32

**Kotelnikova S.** Iron-oxidizing microorganisms in St. Andrew Hot Springs in Grenada. In WINDREF Annual Report, St Georges University, Grenada 2003, p .37-39.

**Caputo N and S. Kotelnikova.** Novel Antibiotics from Tropical Marine Environment. In WINDREF Annual Report, St Georges University, Grenada 2003, p .28-29.

**V. Zxeltkov and S. Kotelnikova.** Sulfate-reducing bacteria in oxidized freshwater of tropical mangroves. In WINDREF Annual Report, St Georges University, Grenada 2004, pp. 14-16

**Davis S. and Kotelnikova S.** Gram-negative bacteria from aquatic environments of Grenada (61.4W and 12.0 N), West Indies. In WINDREF Annual Report, St Georges University, Grenada 2004, pp.20-24

**Kotelnikova S.** Identification of bacteria producing antagonistic compounds isolated from marine biofilms of Grenada. In WINDREF Annual Report, St Georges University, Grenada 2004, p .24-25.

**Kotelnikova, S.**, Hooten, J., Gerlach, A., and C. Bruno. (2004). Post hurricane water surveillance in problematic areas of Grenada. *WINDREF Report.*, Grenada, West Indies, pp. 28-32.

**Kotelnikova S.** SGU Environmental Testing Unit (ETU) established and supervised by CERI. In WINDREF Annual Report, St Georges University, Grenada 2004, p. 25-27

**Kotelnikova S and T. Chao.** Water quality assessment and potential health risks at Apres Tout. Grenada. Project Report to Just a Drop, St George's University, 2005, pp.1-40

**Thirath Chau, Shakeera James and Svetlana Kotelnikova.** Summer 2005 - Apres Tout Water Project. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 30-33.

**Varicheva. Y, Bhamarasetty. B, Birungi. J. and S. Kotelnikova.** New Species Isolated from the Bottom of the Sea, Grenada, West Indies. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 23-27. **Marisa Nimrod, Michael Klug, Jessica Kramer, Mehram Massumi, Dawn Adams and S. Kotelnikova.2005** The Effect of Water Quality on the Students of St George's University. 54-56.

**Rochard Daniel, Smith Jaime and Svetlana Kotelnikova.** The Antimicrobial Properties of the Nutmeg. In WINDREF Annual Report, St Georges University, Grenada 2005, p. 44-46

**Bruno C and S. Kotelnikova.** Characterization of novel bacterial species and genera. In WINDREF Annual Report, St Georges University, Grenada 2005, p.47-50.

**Nicholas D. Caputo and S. Kotelnikova,** Novel Antimicrobial Compounds from Tropical Marine Environments. In WINDREF Annual Report, St Georges University, Grenada 2005, p.50-53.

**Kotelnikova, S., Hallbäck, L., and K. Pedersen.** *“Fountain of youth” in the Iron Springs in St Andrews, Grenada: pre-investigation stage.*. WINDREF Research Institute Annual Report, 2006, pp.29-31.

**Kotelnikova, S. and Nicholas D. Caputo.** *Vibrio croceus* sp. nov., a yellow, halophilic marine bacterium that produces active secondary metabolites isolated from the

biofilms of sea rocks collected from the coastal waters of Grenada. WINDREF Research Institute Annual Report, 2006, pp.31-34.

**Kotelnikova, S, Caputo, N.B., Bruno, C.K., E.L. Martin.** *Vibrio salinivivax* sp. nov., sp. a moderately halophilic UV resistant marine bacterium isolated from a biofilm from the sea floor in Grenada. WINDREF Research Institute Annual Report, 2006, pp.39-45.

**Kotelnikova, S.,** Caputo, N., Bruno, C., and E. Martin. (2006). Unique bacteria from the bottom of the sea in Grenada: Friends or enemies? *WINDREF Report.*, Grenada, West Indies, pp. 19-21.

[www.sgu.edu/windref/windref.nsf/AnnualReports\\_main?OpenForm](http://www.sgu.edu/windref/windref.nsf/AnnualReports_main?OpenForm)

**Kotelnikova S.** Graduate and undergraduate research education becomes an international effort. WINDREF Research Institute Annual Report, 2007, pp. 15-22.

**Kotelnikova S, Samuel, B., Garraway, D and T. Smith.** Circadian cycle of Iron-Oxidation in Warm Soda Springs in St Andrew's, Grenada, West Indies. WINDREF Research Institute Annual Report, 2007, pp. 26-31.

**Bruno, C.K., and S. Kotelnikova** Novel Marine bacteria and their antagonistic properties against medically relevant biofilms. WINDREF Research Institute Annual Report, 2007, pp. 33-37.

**Crane, H., G. Burgess and S. Kotelnikova.** Characterization of marine sponge-associated bacteria and cytotoxic activity of sponge extracts towards human cancer cells. WINDREF Research Institute Annual Report, 2007, pp. 43-46.

**Kotelnikova, S., Walker, M., and T. Caines.** Do the microorganisms in the Soda spring water derive energy from the oxidation of manganese? WINDREF Research Institute Annual Report, 2007, pp. 31-33.

**Naraine, R., Smith T., Hallback, L., Jagevall, S., Pedersen, K and S. Kotelnikova.** Microbial diversity in the iron-oxidizing biofilms of Soda Springs in Grenada. WINDREF Research Institute Annual Report, 2007, pp. 22-26.

**Patel, R.H., and S. Kotelnikova.** THE ECOLOGICAL DISTRIBUTION OF VIABLE INDICATOR ORGANISMS AND ASSOCIATED HEALTH RISKS FROM ST. GEORGE'S BAY IN GRENADA. WINDREF Research Institute Annual Report, 2007, pp. 39-43.

**Jason Johnson, Jayson Weir, Cynthia Bruno and S. Kotelnikova.** Physiological Characterization of Novel Marine Bacterial Species Isolated off Grenada, West Indies. WINDREF Research Institute Annual Report, 2007, pp.37-39.

Ravindra Naraine, **Svetlana Kotelnikova**, Sara Jägevall, and Karsten Pedersen, Novel Archaeon Discovered in Iron-oxidizing Biofilms of Soda Spring in Grenada, WINDREF Research Institute Annual Report, 2008, pp. 1-4.

Naraine, R.\*, **Kotelnikova, S.\***, & Pedersen, K. Enigma of Biofilm in the Iron Soda Spring in Grenada: preliminary evaluation into the microbial abundance. WINDREF Research Institute Annual Report, 2008, pp. 1-4.

**Kotelnikova, S.** Major Area of Research in Marine Biotechnology WINDREF Research Institute Annual Report, 2008, pp. 1-9.

**Kotelnikova, S.** Swedish Research Council Funds SGU Research and Development. WINDREF Research Institute Annual Report, 2008, pp. 1-3.

**Kotelnikova, S.** UV-resistant Marine Micro-organisms as Producers of Anti-UVB Compounds WINDREF Research Institute Annual Report, 2008, pp. 1-3.

**Svetlana Kotelnikova**, Laura Jamieson and Grant Burgess. Marine Bacteria associated with Sponges: Recent Developments in Marine Biotechnology at SGU. WINDREF Research Institute Annual Report, 2008, pp. 1-6.

**Kotelnikova, S.** SGU Research in Microbiology Presented at a Regional Meeting Compounds WINDREF Research Institute Annual Report, 2008, pp. 1-3.

**Kotelnikova S.** Research at SGU Gains International Recognition - Part.1. In SGU Gazette, November, 23, 2007, issue 102.

<http://www.sgu.edu/calendars/sgugazette.nsf/GazettePastIssue?OpenForm&Date=11/23/2007>;

<http://www.sgu.edu/calendars/sgugazette.nsf/GazetteFullStoryPast?readform&LookupKey=11/23/2007-->3>

**Kotelnikova S.** Graduate and undergraduate research education becomes an international effort under the roof of Caribbean Environmental Research Initiative, WINDREF at St. George's University. SGU Gazette, November, 30, 2007 and December, 5, 2007

**Kotelnikova S.** Research on Grenadian sponges. In SGU Gazette, August 29, 2008 issue 118, published on line

<http://www.sgu.edu/calendars/sgugazette.nsf/GazettePastIssue?OpenForm&Date=08/29/2008>

**Kotelnikova S.** New Discoveries within the Warm Soda Springs at Clabony May Help to Counter Global Climate Change. SGU Gazette, September, 19, 2008, issue 119,

published on line

<http://www.sgu.edu/calendars/sgugazette.nsf/GazetteFullStoryAll?openform&uid=280F5F3F76A6E940042574AC0054441B>

### **Manuscripts in preparation:**

Kotelnikova, S.V., Ryan MacDonald, and Eugene Martin. Effects of ultraviolet radiation on moderate halophilic marine bacteria *Vibrio salinivivax*, *V. croceus* and *Serratia grenadiensis* sp. nov., isolated from biofilms on the bottom of the sea in Grenada. For Microbiology (Elsevier). pp.1-16.

Kotelnikova S.V., Naraine, R, Hallbeck, Lotta, Jagevall, S., and K. Pedersen. The Microbial Diversity of Warm Soda Spring in Grenada. Geomicrobiology Journal.

Crane, H.L., Kotelnikova, S.V., Yong, Y., Crawford, Clark J. and J. Grant Burgess. Characterization of marine sponge-associated bacteria and cytotoxic activity of sponge extracts towards human cancer cells. J. Natural Products, to be submitted in 2008, pp.1-17.

Smith, T., Kotelnikova S.V., Naraine, R, Hallbeck, L., Jagevall, S., and K. Pedersen. A preliminary report on the algae of Soda Springs in Grenada. West Indian Journal of Sciences, pp. 1-9.

Bruno, C., and S. Kotelnikova. Prevention of fouling by reef fish microorganisms. Biofouling, 2008, pp.1-15.

### **Submitted manuscripts**

Bruno, C., Kotelnikova, S., Pedersen, K., and D. Lennon. (2008). *Psychrobacter piscidermidis* sp. nov., a halotolerant, alkalitolerant marine bacterium isolated from *Sparisoma viridae* in Grenada. IJSEM [Submitted February 8, 2008; IJSEM paper no. IJS/2008/001073]

Rakesh H. Patel, Svetlana Kotelnikova and Karsten Pedersen The Bacteriological Analysis and Health Risks in the Urban Estuary of St. George's Bay, Grenada, West Indies. For Journal of Water Pollution Bulletin Elsevier. Pp.1-31. **SUBMISSION MANUSCRIPT ID: JWPB/2008/007235**

Svetlana V. Kotelnikova, Nicholas B. Caputo , Cynthia K. Bruno Jayson Weir, Jason Johnson, Eugene Martin and Karsten Pedersen. *Vibrio salinivivax* sp. nov., sp. a halophilic UV resistant marine bacterium isolated from biofilm on the bottom of the

sea in Grenada. For International Journal of Evolutionary and Systematic Microbiology. Pp.1-51. **SUBMISSION; MANUSCRIPT ID:** IJS/2008/007385

Svetlana V. Kotelnikova, Nicholas D. Caputo, , Cynthia K. Bruno, Eugene Martine and Karsten Pedersen. *Vibrio croceus sp. nov.*, a yellow, halophilic marine bacterium that produces active secondary metabolites isolated from the biofilms of sea rocks collected from the coastal waters of Grenada. For International Journal of Evolutionary and Systematic Microbiology. Pp. 1-31. **SUBMISSION MANUSCRIPT ID:** IJS/2008/008441.

### **Participation in funded projects as a principal investigator 2004-2009.**

#### **Intramural SGU Small Grant Research Initiative grants**

The info for the GSP SRGI grants (in USD) :

GSP-SRGI-04003 -14 April 2004: S. Kotelnikova, Cynthia Bruno, Nicholas Caputo, François Halle , "Identification of Biofilms-associated Marine Microorganism": \$1,920.00 awarded / \$1,950.05 spent.

GSP-SRGI-04004 - 14 April 2004: S. Kotelnikova, Cynthia Bruno, Nicholas Caputo, François Halle, "Proteomics and Toxicity of Marinocines": \$2,000.00 awarded & \$1,004.00 provided by Microbiology Dept budget.

GSP-SRGI-07001 - 23 January 2007: S. Kotelnikova, Cynthia Bruno, "Novel Marine Bacteria with Antagonistic Properties Against Human Biofilms & the Development of a Novel Assay to Screen for Quorum Sensing Inhibition": \$3,000 awarded / \$3,437.00

GSP-SRGI-05001 - 21 February 2005: S. Kotelnikova, Nicholas Caputo, "Novel Antibiotics Producing Microorganisms from Tropical Marine Surfaces": \$1,959.75 awarded.

GSP-SRGI-06003 - 20 April 2006: S. Kotelnikova, Rakesh Patel, "Ecological Survival Properties of Pelagic & Benthic Indicator Microorganisms from the St. John's River Outflow in Grenada": \$2,320.00 awarded.

GSP-SRGI-06008 - 19 December 2006: S. Kotelnikova, "New Iron-oxidizing Microbial Community in St. Andrew's Warm Springs in Grenada, West Indies": \$3,000.00 approved.

GSP-SRGI-08001 - 9 March 2008: S. Kotelnikova, Ravindra Naraine, "Archaeal Diversity in the Iron Springs" \$3,000 approved + further funding for travel approved by Dr. Pensick

Phylogenetic diversity and biogeography of marine sponge-associated bacteria and the potential usage of secondary metabolites in biotechnology. CO-INVESTIGATORS: SGU: Laura Jamieson, Hilary Crane MSc students, Newcastle University, UK: Prof. Grant Burgess (NCL), Victor Amadi, free-standing Ms Candidate in Microbiology, Grenada. Budget of 1000 USD. 2007

“Fish Microflora with antagonistic properties in Grenada” issued by SGU in #SGRI 04004, budget of 2000 USD.

“A Novel Marine bacteria and their antagonistic properties against medically relevant biofilms” # SRGI 07001, budget of 3000 USD as continuation of “Fish Microflora with antagonistic properties in Grenada”, 2007.

“New iron-oxidizing microbial community in St Andrews, Warm Springs in Grenada, West Indies”, SRGI 06008 Budget of 3000 USD. 2007

“ARCHAEAL DIVERSITY IN THE IRON SPRINGS” SRGI 08001, budget of 3000 USD as continuation of “ *New iron-oxidizing microbial community in St Andrews, Warm Springs in Grenada, West Indies (IRB SGU 06010)*. 2008

“Development of Molecular and FISH Microscopy Methods at the Department of Microbiology in the University of St Georges”. #SRGI 08005. Budget 4000 USD. Training program at Microbial Analytics Sweden AB and at the University of Gothenburg, in Sweden in May-July 2008.

### **Exramural grants**

“ARCHAEAL DIVERSITY IN THE IRON SPRINGS” SRGI 08001, budget of 3000 USD as continuation of “ *New iron-oxidizing microbial community in St Andrews, Warm Springs in Grenada, West Indies*. Swedish Research Counsel Research fellowship 25 000 USD, 2008

Phylogenetic diversity and biogeography of marine sponge-associated bacteria and the potential usage of secondary metabolites in biotechnology. British Counsel, 10 000 USD, 2007