

Tuesday, August 18 - 1st Parallel



Barcoding Medicinal Plants 1

Allan M. Showalter Ohio University, USA

DNA barcoding medicinal plants from Pakistan

Sathishkumar Ramalingam Bharathiar University, India

Authentication of Indian herbal products using DNA barcodes

Aisha Tahir Biodiversity Institute of Ontario, University of Guelph, Canada

Utility of DNA barcoding for the conservation and authentication of medicinal plant species of economically poor areas of Pakistan to improve socio-economic condition of indigenous people

Abdolbaset Ghorbani Evolutionary Biology Centre, Uppsala University, Sweden

DNA barcoding in ethnobotany and ethnopharmacology: Identifying medicinal plants traded in local markets

Hui Yao Institute of Medicinal Plant Development, CAMS & Peking Union Medical College, China

DNA barcoding database for Chinese Pharmacopoeia

Dorcas M. Lekganyane African Centre for DNA Barcoding, South Africa

“Muthi” from the wild: A survey of bulbous and perennial herbs traded at Faraday Traditional Medicinal Market in Johannesburg, South Africa using DNA barcoding as an identification tool

Biodiversity and Turnover in Hotspots

Belén Bukowski Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Argentina

First results of the Global Malaise Trap Program in Argentina: Strikingly high biodiversity in the southern extreme of the Atlantic Forest.

Joshua Kohn University of California San Diego, USA

Barcoding a biodiversity hotspot: Malaise-trapped insects of Southern California

Michelle D’Souza Biodiversity Institute of Ontario, University of Guelph, Canada

Investigating terrestrial arthropod biodiversity in a tropical ecosystem using Barcode Index Numbers and phylogenetic community structure

Priscila E. Hanisch Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Argentina

Barcoding the ants of Iguazú National Park, a biodiversity hotspot in northeastern Argentina

Kate Pare Department of Integrative Biology, University of Guelph, Canada

By-passing the taxonomic impediment in Neotropical Collembola to measure changes in diversity and phylogenetic structure

M. Alex Smith Department of Integrative Biology, University of Guelph, Canada

Elevation, crypts and phylogenetic community structure of Neotropical arthropods

Biosurveillance 1

Cameron Duff Canadian Food Inspection Agency (CFIA), Canada

Regulatory applications of barcoding in the Canadian Food Inspection Agency’s Plant Health Program

Jennifer Hodgetts Fera Science Ltd., UK

The application of DNA barcoding for bio-security: a perspective from the UK

Alfred J. Arulandhu RIKILT Wageningen UR, Netherlands

DNA metabarcoding of endangered plant and animal species in seized forensic samples

Frédéric Chain McGill University, Canada

Monitoring biodiversity for the early detection of aquatic invasive species using metabarcoding applied across Canadian ports in the Pacific, Arctic, Atlantic and Great Lakes

Junko Shimura Convention on Biological Diversity, Canada

An imperative action in invasives management – spreading Rapid Species Identification to developing countries

Braulio F. de Souza Dias Convention on Biological Diversity, Canada

Facilitated discussion

Detection of eDNA 1

Inger Greve Alsos UiT - The Arctic University of Norway, Norway

Plant DNA in sediments: to which degree do they represent the flora?

Nicole Fahner Biodiversity Institute of Ontario, University of Guelph, Canada

Biodiversity assessment of plant communities from soil eDNA: Impact of marker selection on perceived community turnover

Elise Furlan University of Canberra, Australia

A framework for estimating eDNA sensitivity

Arjen Speksnijder Naturalis Biodiversity Center, Netherlands

Validation of NGS metabarcoding for detection and identification of (freshwater) invertebrates

Natasha Serrao Trent University, Canada

Using environmental DNA to detect endangered redbreasted dace, *Clinostomus elongatus*

Ian King Biodiversity Institute of Ontario, University of Guelph, Canada

Application of environmental DNA (eDNA) methods for assessing biodiversity and biomonitoring endangered species: a case study of Jefferson Salamander (*Ambystoma jeffersonianum*) in southern Ontario, Canada

Trophic Ecology of Mammals

Elizabeth K. Mallott Department of Anthropology, University of Illinois at Urbana-Champaign, USA

Integrating DNA barcode data with behavioral and ecological data in a study of white-faced capuchin faunivory

Tyler Kartzinel Princeton University, USA

DNA metabarcoding illuminates dietary niche partitioning by large mammalian herbivores in Africa

Jean-Luc Jung Laboratory BioGeMME, University of Brest, France

DNA barcoding to monitor the biodiversity of marine mammals: species identification along the French and Mauritanian Atlantic coasts, and diet analysis

Valeria B. Salinas-Ramos Posgrado en Ciencias Biológicas Instituto de Biología, Universidad Nacional Autónoma de México, México

Dietary overlap and seasonality in three species of mormoopid bats from a tropical dry forest

Aitor Arrizabalaga-Escudero Department of Zoology and Animal Cell Biology, Faculty of Science and Technology, University of the Basque Country, UPV/EHU, Spain

What can DNA barcoding tell us about the dietary niche overlap of sibling sympatric bat species?

Diversity and Systematics of Bees

Christophe Praz University of Neuchâtel, Switzerland

Deep mitochondrial divergences within species are the rule rather than the exception in Western Palearctic leafcutter bees

Gontran Sonet OD Taxonomy and Phylogeny, Royal Belgian Institute of Natural Sciences, Belgium

High-throughput sequencing of PCR amplicons: a test to barcode a bee species complex (Hymenoptera: Apoidea: Halictidae) and survey *Wolbachia* infections

Genevieve Rowe York University, Canada

Integrative taxonomy uncovers hidden diversity within three genera of Canadian Osmiini (Hymenoptera: Megachilidae)

Jason Gibbs Michigan State University, USA

The good, the bad and the ugly: DNA barcoding a nightmare taxon

Rocio Ana Gonzalez-Vaquero Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Argentina

Barcoding as a useful tool for South-American wild bee systematics

Ricardo Ayala Barajas Estación de Biología Chamela, Instituto de Biología, Universidad Nacional Autónoma de México (UNAM), México

The native bees of México and the DNA barcode of life project

Fish Barcode of Life 1

Martha Valdez Moreno El Colegio de la Frontera Sur, Chetumal, México

A look at the past to plan for the future: 10 years of fish barcodes in Quintana Roo

Hadi Dahruddin Indonesian Institute of Sciences, Research Centre for Biology, Indonesia

DNA barcoding of Javanese and Balinese freshwater fishes: molecular insights into a poorly known ichthyofauna

Timothy John Bartley Department of Integrative Biology and BIO, University of Guelph, Canada

Food webs from fish guts: Diet analysis using DNA barcoding increases resolution and changes structure in Canadian boreal shield lake food webs

Gregory Neils Puncher University of Bologna/Ghent University, Belgium

Species identification of ancient tuna remains using a novel paleogenetic protocol and barcoding techniques

Matthias Geiger Zoological Research Museum Alexander Koenig - Leibniz Institute for Animal Biodiversity - Foundation under public law, Germany

The FREDIE project – different lessons from a large-scale DNA barcoding campaign

Dirk Steinke Biodiversity Institute of Ontario, University of Guelph, Canada

Linking adults and immatures of South African marine fishes

Tuesday, August 18 - 2nd Parallel

Barcoding Medicinal Plants 2

Pang-Chui Shaw The Chinese University of Hong Kong, China

The applications and limitations of DNA markers in authenticating herbal materials

Sanele N.S. Shiba African Centre for DNA Barcoding, South Africa

Exposing the illegal trade in *Encephalartos* species at the Faraday 'muthi' market in South Africa using DNA barcoding

Nithaniyal Stalin A. SRM University, India

Identification of species adulteration in medicinal plant raw drugs by DNA barcoding

Tnah Lee Hong Forest Research Institute, Malaysia

DNA barcoding of 100 common medicinal plants in Malaysia for species authentication

Hong Zhou Institute of Medicinal Plant Development, CAMS & Peking Union Medical College, China

Use of DNA barcoding technology to appraise commercial *Spatholobus* products

Barcoding Type Specimens

Axel Hausmann Bavarian State Collection of Zoology, Munich, Germany

Calibrating the taxonomy of a megadiverse family on BOLD: 2700 geometrid moth types barcoded (Geometridae, Lepidoptera)

Sean Prosser Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcodes from century-old type specimens using next-generation sequencing

Mónica Arakaki Museo de Historia Natural - UNMSM, Peru

DNA barcoding to support biodiversity conservation, sustainable harvesting and trade in Peru

E. Anne Chambers University of Texas at Austin, USA

Assessing DNA barcodes as a diagnostic tool for North American reptiles and amphibians in nature and natural history collections

Juan M. Daza Biology Institute, Universidad de Antioquia, Colombia

Barcoding herpetological collections: discovering hidden biodiversity in a hotspot

Angela Telfer Biodiversity Institute of Ontario, University of Guelph, Canada

BIO's Bio-Inventory and Collections Unit (BIC): Specimen vouchers and barcodes create a unique natural history resource

Biosurveillance 2

Andrew Frewin Biodiversity Institute of Ontario, University of Guelph, Canada

Plant Pest Barcoding Campaign update

Jean-François Landry Agriculture & Agri-Food Canada, Canadian National Collection of Insects, Canada

Barcoding *Paralobesia cypripediana* (Tortricidae): a stealthy micromoth feeding on the threatened orchid *Cypripedium reginae*

Muhammad Ashfaq Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding of plant pests clarifies cryptic species complexes

Xue-Qin Wang Institute of Insect Sciences, Zhejiang University, China

Using barcoding to analyse prey consumption by generalist predators in rice ecosystems

Stefaniya Kamenova INRA UMR IGEPP, France

High-throughput molecular approach for quantifying pest regulation services and disservices provided by farmland insect communities

Alex Borisenko Biodiversity Institute of Ontario, University of Guelph, Canada

Status report on barcode coverage for invasive alien species

Fish Barcode of Life 2

Claudio Oliveira UNESP, Brazil

Using different methods to access the difficult task of delimiting species in a complex Neotropical hyperdiverse fish group

Nicolas Hubert Institut de Recherche pour le Développement, UMR 5554 (UM2-CNRS-IRD), ISEM, France

Comparative phylogeography of Javanese and Balinese freshwater fishes: DNA barcodes shed light on Quaternary range expansion dynamic in a biodiversity hotspot

Luís M. Oliveira Centre of Molecular and Environmental Biology (CBMA), Portugal

Compilation and validation of a global DNA barcode reference library for European marine fishes

Junbin Zhang Shanghai Ocean University, China

Dietary analysis of marine fishes: enhancing the detection of barcoded reads for high-throughput sequencing in combination with blocking primers

Gulab Khedkar Department of Zoology, K.K.M.College, Manwath, Dist.Parbhani, India

DNA barcodes for the fish of the second-largest river of India: The Godavari

Robert D. Ward CSIRO Oceans and Atmosphere Flagship, Australia

Barcoding the fishes of Australia – progress, uses, and lessons learnt

Food Webs and Communities

Tomas Roslin University of Helsinki, Finland

Dissecting Arctic food webs by DNA barcodes

Carlos Garcia-Robledo Institute of Ecology, México

Reconstructing interactions among plants, insect herbivores, and phoretic mites using DNA barcodes: modeling coextinctions under projected climate change

Scott J. MacIvor York University, Canada

Leaves of leaf-cutting bees: Identity and diversity determined by DNA barcoding

Douglas Yu Kunming Institute of Zoology, China

High-throughput monitoring of wild bee diversity and abundance via mitogenomics

Mark T. Merilo Biodiversity Institute of Ontario, University of Guelph, Canada

Progress and prospects in using DNA barcoding to advance coevolutionary biology

Viacheslav Y. Fofanov Informatics and Computing Program, Northern Arizona University, USA

Bats as drivers of bacterial biodiversity across multiple trophic levels of subterranean biomes

Marine Biodiversity and Systematics

Michael Raupach DZMB/Senckenberg am Meer, Germany

Crabs, scallops, fish and more: Barcoding the marine fauna of the North Sea

Filipe O. Costa CBMA- Centre of Molecular and Environmental Biology, Portugal

DNA barcodes of polychaetes (Annelida: Polychaeta) from the southern European Atlantic coast underscores the incipient state of the global reference library for this taxon

Ian Hogg University of Waikato, New Zealand

DNA barcoding the Demospongiae (Porifera) from the Bay of Plenty, New Zealand – Connecting morphology with molecules

Mudjekeewis D. Santos Genetic Fingerprinting Laboratory, NFRDI, Philippines

Updates on the status of giant clams in the Philippines using mitochondrial COI and 16s rRNA genes

Owen S. Wangensteen Center for Advanced Studies of Blanes (CEAB -CSIC), Spain

DNA metabarcoding of marine hard-bottom communities using 18S and COI

Phylogeography & Geographic Patterns of Speciation

Matthew Hrycyshyn University of Waterloo, Canada

The phylogeography of the *Hyalella azteca* species complex in North America

Burton Lim Royal Ontario Museum, Canada

Patterns of genetic diversification of bats in the Caribbean and their relationship to other populations across the Neotropics

Agustina A. Ojeda Instituto Argentino de Investigaciones de las Zonas Áridas, CONICET, Argentina

DNA barcodes highlight genetic diversity patterns in rodents from desert and Andean areas of Argentina

Ángela María Mendoza Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Colombia

Cryptic diversity and geographic patterns revealed by building the DNA barcode library of Colombian birds

Dario A. Lijtmaer Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Argentina

Using DNA barcodes to evaluate the level of endemism and isolation in the avifauna of the Central Sierras in Córdoba, Argentina

Pablo D. Lavinia Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Argentina

From a local barcoding initiative to a continental-scale, multi-institutional assessment of avian diversification in the Neotropics

Wednesday, August 19 - 3rd Parallel

Community Assembly

Bezeng Simeon Bezeng African Centre for DNA Barcoding, University of Johannesburg, South Africa

Revisiting Darwin's naturalization conundrum: explaining invasion success of non-native trees and shrubs in southern Africa

Mailyn A. Gonzalez Instituto Alexander von Humboldt, Colombia

Integrating phylogenetic and functional diversity in REDD+ projects: a pilot in the Pacific rainforest in Colombia

Guo-Jie Brandon-Mong Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia

Optimizing metabarcoding of tropical Malaise trap samples and preliminary results on seasonal changes in insect diversity in Peninsular Malaysia

David Donoso Universidad Técnica Particular de Loja, Ecuador

COI barcodes link population genetics with soil food web structure

Gillian K. Martin Université du Québec à Montréal, Canada

Improving our understanding of metacommunity structure using DNA barcoding

Cathryn Abbott Fisheries and Oceans Canada, Canada

Use of integrative taxonomy and DNA barcoding for characterization of ecological processes structuring marine benthic community assemblages in British Columbia.

Conservation and Biodiversity Forensics

Monica Mwale National Zoological Gardens of South Africa, South Africa

Progress in the barcoding of illegally traded South African wildlife species at the National Zoological Gardens of South Africa

Suresh Kumar U. Rajiv Gandhi Centre for Biotechnology, India

Development of a DNA barcode database of captive animals in Thiruvananthapuram Zoo, Kerala, India

Natasha Serrao Trent University, Canada

Phylogeography and conservation of endangered Redside Dace, *Clinostomus elongatus*

Raituja Hange Paul Hebert Centre for DNA Barcoding and Biodiversity Studies, India

DNA barcode-based wildlife forensics for resolving the origin of claw samples

Pierre Ouvrard School of Biological Sciences, University of Edinburgh, UK

Barcodes to investigate the plant visitor community: *Brassicogethes* spp.

Vaithilingam Ravitchandirane Kanchi Mamunivar Centre for Post Graduate Studies, India

"Ethnoichthyogenomics": Identification, phylogeny and documentation of ethnomedicinally important fishes using DNA barcodes

Detection of eDNA 2

Masaki Miya Natural History Museum and Institute, Chiba, Japan

MiFish, a set of universal primers for metabarcoding environmental DNA from fishes: Detection of >230 species from aquarium tanks and coral reefs in the subtropical western North Pacific

Maggie Boothroyd Trent University, Canada

Environmental DNA (eDNA) detection and habitat occupancy of threatened Spotted Gar (*Lepisosteus oculatus*)

Ping-Shin Lee Institute of Biological Sciences, University of Malaya, Malaysia

Comparison of sampling methods including blowfly-derived mammal DNA for tropical mammal diversity assessments

Charise Currier Trent University, Canada

Targeted detection of multiple species at risk (Unionidae) using environmental DNA (eDNA)

Laurence Masson Trent University, Canada

Monitoring aquatic species' invasions using environmental DNA

Parasites and Vectors

Sean Locke University of Puerto Rico, USA

Barcoding the Diplostomoidea (Platyhelminthes: Digenea)

Alexandre N. Leveille Dept. of Pathobiology, Ontario Veterinary College, University of Guelph, Canada

Using mitochondrial genome targets within the phylum Apicomplexa: Divergent life cycle stages, cryptic species and unexplored diversity in the coccidia

Luis M. Hernandez-Triana Animal and Plant Health Agency, UK

Utility of DNA barcoding and other molecular methods for bloodmeal analysis in mosquitoes (Diptera, Culicidae) of medical and/or veterinary importance in southern England

Elisabeth Herniou CNRS - Insect Biology Research Institute, France

Diversity, species delimitation and evolution of insect viruses

Isabel Valles Vega Centro de Interdisciplinario de Ciencias Marinas, México

Pelecanus occidentalis infected by two related parasites species of *Contracaecum* in Baja California Peninsula: new records and ecological perspectives

John Barta Department of Pathobiology, University of Guelph, Canada

Tiny, but complicated, mitochondrial genomes make barcoding challenging in the parasitic phylum Apicomplexa.

Pollen Barcoding and Pollination Biology

Karen L. Bell Emory University, Department of Environmental Sciences, USA

The effect of sample complexity and sequencing depth on DNA barcoding of mixed-species pollen samples

Rodney T. Richardson The Ohio State University, USA

Pollen Analysis: Is Metabarcoding the Next Generation?

Natasha de Vere National Botanic Garden of Wales and Aberystwyth University, UK

Investigating the floral preferences of pollinating insects using pollen DNA metabarcoding

Alexander Keller Department of Animal Ecology and Tropical Biology, University of Wuerzburg, Germany

NGS pollen meta-barcoding and automatic taxonomic classification

Annamarie Gous Biotechnology Platform, Agricultural Research Council, Pretoria, South Africa

The application of NGS barcoding in identifying mixed-pollen samples from a historic bee collection

Berry Brosi Emory University, USA

DNA metabarcoding of pollen: Progress, technical limitations, and future directions

Speciation, Biogeography, and Ecology of Marine Life

Pedro Emanuel Ferreira dos Reis Vieira Departamento de Biologia and CESAM - Centro de Estudos do Ambiente e do Mar, Universidade de Aveiro, Portugal

Phylogeographic structure of *Dynamene edwardsi* (Crustacea: Isopoda) matches remarkably the sequential genesis of the Macaronesian islands

Carlos J. Moura University of the Azores - IMAR/MARE, Portugal

Large-scale DNA barcoding of marine hydroids of the superfamily Plumularioidea (Cnidaria, Hydrozoa)

Kara K. S. Layton University of Western Australia, Australia

Exploring diversity and distribution of a nudibranch genus (*Chromodoris*) in the Indo-Pacific using DNA barcodes

Heather E. Braid Auckland University of Technology, New Zealand

Ecology and systematics of New Zealand deep-sea squids

Kathryn Hotke Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding Canadian scyphozoans

Anaïs Rey Laboratoire BioGeMME, Université de Bretagne Occidentale, France

DNA barcoding and cetacean species identification along the Mauritanian coast, including the spectacular identification of a *Balaenoptera omurai* specimen

Thursday, August 20 - 4th Parallel

Applied Biomonitoring

Joel Gibson Biodiversity Institute of Ontario, University of Guelph and Environment Canada, Canada

Biomonitoring boreal wetlands using environmental DNA barcoding and high-throughput sequencing

Kristy Deiner Eawag: Swiss Federal Institute of Aquatic Science and Technology, Switzerland

The power and promise of environmental DNA for river biodiversity monitoring

Carlos Lopez Vaamonde INRA Orléans - Unité de Recherche en Zoologie Forestière, France

DNA metabarcoding of saproxylic beetles – streamlining species identification for large-scale forest biomonitoring

Amanda M. Naaum Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding and real-time PCR for identification of entrained species

Matthew L. Bowser U.S. Fish & Wildlife Service, Kenai National Wildlife Refuge, USA

A regional DNA barcode library for landscape-scale monitoring of multi-taxa assemblages

Jan Pawlowski University of Geneva, Switzerland

Inferring biotic indices from metabarcoding data: promises and challenges

Barcoding Socio-Economically Important Species

Annegret Nicolai UMR 6553 EcoBio, Université Rennes 1, France

DNA barcoding on the slime trail: The Canadian invasion of the terrestrial gastropod *Cepaea nemoralis* (Stylommatophora: Helicidae) and new perspectives for studying threatened species

Biju Kumar A. University of Kerala, India

DNA barcoding an invading suckermouth sailfin catfish *Pterygoplichthys* (Siluriformes: Loricariidae) in India: issues with possible hybrids

Allison Marinich Trent University, Canada

Sensitive detection of water soldier and other invasive aquatic plants using environmental DNA (eDNA)

Qiaoyun Yue Zhongshan Entry-Exit Inspection and Quarantine Technical Center, China

DNA barcoding of the Chinese fly *Chrysomya megacephala* and comparison to its published data around the world

Vikas Jindal Punjab Agricultural University, Ludhiana, India

Cataloguing genetic variations in *Sesamia inferens* populations infesting rice using DNA barcoding

Food Authenticity and Safety 1

Mudjekeewis D. Santos Genetic Fingerprinting Laboratory, NFRDI, Philippines

Socio-economic impacts of DNA barcoding on Philippine fisheries and aquatic resources

Donna-Maree Cawthorn Stellenbosch University, South Africa

Harnessing the power of DNA barcoding to detect and deter fish mislabeling in South Africa

Kimberly A. Warner Oceana, USA

A market survey of fish species substitutions in the United States to advance seafood traceability requirements

Christine Kaepfel Department of Applied Genomics, Eurofins Medigenomix GmbH, Germany

Parallel food authenticity and microbial composition analyses using DNA barcoding and next-generation sequencing

Stephen Phelan SAP, USA

Applying DNA barcoding to the manufacturing supply chain, to reduce substitution and adulteration fraud

Robert Hanner Biodiversity Institute of Ontario, University of Guelph, Canada

Minimum information for conducting a DNA barcoding market survey

Fungal Biodiversity

Jianping Xu McMaster University, Canada

Barcoding wild edible mushrooms in Southwestern China

Helena Korpelainen University of Helsinki, Finland

Diversity of indoor fungi: what does it tell about the health of buildings?

Laszlo Irinyi Molecular Mycology Research Laboratory, CIDM, Sydney Medical School-Westmead Hospital, The University of Sydney, Westmead Millennium Institute, Sydney, NSW, Australia

Alternative barcodes for the identification of human and animal pathogenic fungi

Kristiina Mark University of Tartu, Estonia

Barcoding the Swiss lichens and associated fungal communities using barcoded amplicon 454 pyrosequencing

Aisha Tahir Biodiversity Institute of Ontario, University of Guelph, Canada

Application of DNA barcoding for phylogenetic identification of pathogenic fungi associated with stem-end rot of mango in Pakistan

Laszlo Irinyi Molecular Mycology Research Laboratory, CIDM, Sydney Medical School-Westmead Hospital, The University of Sydney, Westmead Millennium Institute, Sydney, NSW, Australia, Australia

Facing the challenge of growing numbers of fungal infections – sequence-based fungal identification using the ISHAM-ITS reference database

Informatics Tools and Analysis of Large Data Sets

Donald Hobern Global Biodiversity Information Facility, Denmark

The place of barcoding in biodiversity informatics

Eddie Ma Biodiversity Institute of Ontario and School of Computer Science, University of Guelph, Canada

NNEditor: Neural N-label Editor toward automated sequence finishing

Emanuel Weitschek Institute of Systems Analysis and Computer Science - CNR, Italy

Classifying DNA barcode multi-locus sequences with feature vectors and supervised approaches

Lyubomir Penev Pensoft Publishers, Bulgaria

Streamlining scholarly publication of Barcode of Life data

Eric Coissac LECA - CNRS/UJF, France

Towards a universal genome-based DNA barcode - The PhyloAlps project

Markus Ankenbrand Department of Animal Ecology & Tropical Biology, University of Würzburg, Germany

Extending the ITS2-workbench with DNA barcoding capabilities

Lepidoptera: A Model for Systematics and Speciation Research

Marko Mutanen University of Oulu, Finland

Deep intraspecific barcode splits: cryptic species, *Wolbachia* or something else?

Mauricio Moraes Zenker Universidade Estadual de Campinas, Brazil

Integration of DNA barcoding in a local diversity survey of Lepidoptera: confronting morphospecies and DNA barcode OTUs of Arctiinae moths in the Brazilian Atlantic forest

Erik J. van Nieuwerkerken Naturalis Biodiversity Center, The Netherlands

BOLD: great to inventory the small: combining datamining and focused sampling hugely increases knowledge of taxonomy, biology, and distribution of leafmining pygmy moths (Lepidoptera: Nepticulidae)

Vlad Dinca Biodiversity Institute of Ontario, University of Guelph, Canada

Comprehensive phylogeographic assessments as a tool to understand and protect biodiversity on islands

Rodolphe Rougerie Muséum National d'Histoire Naturelle, France

A tale of long tails: combining DNA barcoding and RAD-sequencing to investigate the diversification of Comet- and Moon-moths (Lepidoptera, Saturniidae)

Mari Kekkonen Biodiversity Institute of Ontario, University of Guelph, Canada

The phylogenetic signal of DNA barcodes: Insights on insect families

Plant Barcoding 1

Kowiyou Yessoufou University of South Africa, South Africa

Ecological applications of DNA barcoding: The African experiences

Lianming Gao Kunming Institute of Botany, Chinese Academy of Sciences, China

DNA barcoding for identification of *Cephalotaxus* and the discovery of new species

Sribash Roy CSIR-National Botanical Research Institute, India

Plant barcoding of a wild life sanctuary across a wide climatic zone, Uttaranchal, India

Cintia P. Souto Laboratorio Ecotono Universidad Nacional del Comahue-CRUB, Argentina

Barcoding plant hotspots in Patagonian Monte Desert

Bhavisha P. Sheth CPBGE Department of Biosciences, Saurashtra University, India

DNA barcoding based phylogenetic assessment of some *Vigna* species inferred from nrDNA internal transcribed spacer 2 (ITS2) sequences

Jonathan Davies McGill University, Canada

Human population density in Africa correlates with the evolutionary history of its flora

Thursday August 20 - 5th Parallel

Food Authenticity and Safety 2

Amanda M. Naaum Biodiversity Institute of Ontario, University of Guelph, Canada
Real-time PCR for seafood authenticity: an extension of DNA barcoding

Michael Hogan Applied DNA Sciences, USA

Application of Barcode of Life principles, to protect the international cotton supply chain.

Natalia Ivanova Biodiversity Institute of Ontario, University of Guelph, Canada

Pandora's box in a pill – Unveiling the composition of herbal supplements

Santhosh Kumar J. U. Ashoka Trust for Research in Ecology and the Environment, India

Species admixtures in herbal trade: causes, consequences and mitigation

B. S. Naikwade Aurangabad Municipal Corporation, Siddharth Zoo, India

Evaluation of recent enforcement to prohibit the slaughter of cow and its progeny for beef in India using DNA barcoding

Jennifer Hawkins National Botanic Garden of Wales, Cardiff School of Pharmacy and Pharmaceutical Sciences, UK

Using DNA metabarcoding to investigate the medicinal properties of honey

Freshwater Biodiversity

Arne J. Beermann Ruhr University Bochum, Germany

All complete? Comparison of morphological and DNA-based biodiversity assessments in one of the world's best-studied stream ecosystems (Breitenbach, Germany).

Aynsley Thielman University of Northern British Columbia, Canada

A comparison of traditional morphological and next-generation molecular methods for the identification of benthic invertebrate and fish species in central British Columbia streams

Kara K. S. Layton Biodiversity Institute of Ontario, University of Guelph, Canada

New methods give insight into DNA barcoding Canada's freshwater mussels (Bivalvia: Unionoida)

Petra Kranzfelder University of Minnesota, USA

Comparison of five extraction protocols and direct PCR for the recovery of trace DNA in chironomid pupal exuviae

Xiaolong Lin Department of Natural History, NTNU University Museum, Norway

Exploring genetic divergence in a species-rich insect genus using 2790 DNA barcodes

Torbjørn Ekrem NTNU University Museum, Norway

Future prospects and lessons learned from 9 years of Chironomidae (Diptera) DNA barcoding

Large-Scale Understanding of Terrestrial Biodiversity

Kate Perez Biodiversity Institute of Ontario, University of Guelph, Canada

The Global Malaise Program: assessing global biodiversity using mass sampling and DNA barcoding

Jose Fernandez-Triana Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding of Holarctic Microgastrinae wasps (Hymenoptera): a major step in the integrative taxonomy of these caterpillar parasitoids

Katie McGee Biodiversity Institute of Ontario, University of Guelph, Canada

Effects of land management on soil biodiversity and nutrients using a DNA metasytematic approach

Erin Doyle University of Waikato, New Zealand

Assessing the diversity of terrestrial invertebrates in the mangrove forests of the Firth of Thames, New Zealand

Gergin Blagoev Biodiversity Institute of Ontario, University of Guelph, Canada

Building a DNA barcode reference library for Canadian spiders (Araneae)

Jade Savage Bishop's University, Canada

The Muscidae of Canada: Towards a complete DNA barcode reference library

Next Generation Platforms and Analytical Pipelines 1

Shadi Shokralla Biodiversity Institute of Ontario, University of Guelph, Canada

Non-destructive DNA extraction approaches for massive parallel multiplex sequencing for specimen identification and environmental DNA (eDNA) barcoding using high-throughput sequencing platforms

Vasco Elbrecht Ruhr University Bochum, Germany

Testing primer bias and biomass - sequence relationships in metabarcoding - implications for monitoring of freshwater invertebrate communities

Jeffrey R. Boutain Botanical Research Institute of Texas, USA

The long and the short of DNA barcodes: An approach using nanopore sequencing

Karen E. James Mount Desert Island Biological Laboratory, USA

DNA barcoding and metabarcoding with the Oxford Nanopore MinION™

Jorge Lobo CBMA & MARE – Marine and Environmental Sciences Centre, Portugal

Stepwise implementation of high-throughput sequencing metabarcoding to estuarine macrobenthic communities

Teresita M. Porter McMaster University, Canada

Ribosomal DNA and plastid markers used to sample fungal and plant communities from wetland soils reveal complementary biotas

Plant Barcoding 2

Michelle van der Bank University of Johannesburg, South Africa

Savanna fire and the origins of the 'underground forests' of Africa

Connor P. K. Warne Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding the plants of San Diego County, California: On the verge of the first complete DNA barcode reference library for a globally important regional flora

Linchun Shi Institute of Medicinal Plant Development, CAMS, Peking Union Medical College, China

The complete chloroplast genomes of *Aconitum*: insight into taxonomy and identification of complex plant lineages

Kevin S. Burgess Columbus State University, USA

DNA barcoding to determine the diets of prairie grasshoppers

Abubakar Bello University of Cape Town, South Africa

DNA barcoding reveals microevolutionary signals in fire survival and regeneration strategies in southern African psoraleoid legumes

Maria Kuzmina Biodiversity Institute of Ontario, University of Guelph, Canada

What it takes to identify 5120 vascular plant species of Canada with DNA barcodes

Species Concepts, Boundaries, and Origins

Yuri Kartavtsev A.V. Zhirmunsky Institute of Marine Biology FEB RAS, Russia

Genetic introgression between species: resolving challenges to neo-Darwinism and DNA barcoding

Sarah J. Adamowicz Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding and the origin of species

Robert G. Young Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcoding in the marine realm: challenges, successes, and support for DNA-based species delimitation among the Maxillopoda

Ana S. Barreira Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Argentina

Is DNA barcode intraspecific variation associated with subspecies delimitation and phenotypic variation?

Nicholas Jeffery Department of Integrative Biology, University of Guelph, Canada

Genome size diversity and phylogenetic history in freshwater amphipod (*Hyalella* spp.) species complexes.

Vlad Dinca Biodiversity Institute of Ontario, University of Guelph, Canada

DNA barcodes highlight unique research models in European butterflies

Friday August 21 - 6th Parallel

Advancing Knowledge of Terrestrial Biodiversity

Saleem Akhtar PIASA, NARC, Agriculture University Peshawar, Pakistan

DNA barcoding antlions (Myrmeleontidae: Neuroptera) of Pakistan

Nathalie Smitz Royal Museum for Central Africa/ University of Liège, Belgium

DNA barcoding contributes to the taxonomy of Afrotropical hover flies (Diptera: Syrphidae)

Colin Sobek Northern Arizona University, USA

Species from feces: reliably identifying global bat species with a DNA mini-barcode assay

Nonillon Aspe Hokkaido University, Japan

A molecular phylogenetic study of pheretimoid species (Oligochaeta: Megascolecidae) in Mindanao Island, Philippines

Clare Beet University of Waikato, New Zealand

Assessing the distribution and genetic diversity of Antarctic springtails (Collembola)

Education and Barcoding

Heather Henter University of California San Diego, USA

The San Diego Biodiversity Project

Jisming See Shi Wei Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia

Monitoring of butterflies by schoolchildren to increase environmental awareness and assess effects of climate change in Peninsular Malaysia

Karen E. James Mount Desert Island Biological Laboratory, USA

Combining citizen science and DNA-assisted species identification to enable “a new kind of ecology”

Megan A. Milton Biodiversity Institute of Ontario, University of Guelph, Canada

BOLD tools in support of STEM education

Vanessa Breton Biodiversity Institute of Ontario, University of Guelph, Canada

The School Malaise Trap Program: The benefits of citizen science for barcoding

Bradley Zlotnick San Diego Barcode of Life, USA

“Barcoding our Backyard” at ResMed, Inc.: 52 consecutive weeks Malaise trap project at a corporate headquarters in a Global Biodiversity Hotspot

Ethics, Policy, and Society

Rachel Glover Fera, UK

Meta-barcoding for surveillance and monitoring: meeting policy objectives in the real world

Janis Geary School of Public Health, University of Alberta, Canada

Global perspectives on participating in the International Barcode of Life Project

Janis Geary School of Public Health, University of Alberta, Canada

Diffusing barcoding: The global spread of a good idea

Alex Borisenko Biodiversity Institute of Ontario, University of Guelph, Canada

International Barcode of Life: Between the legal hammer and the policy anvil

Vernon Thomas University of Guelph, Canada

DNA barcoding of invasive species in relation to Canadian federal policy and law

Dirk Neumann Zoological State Collection Munich, Germany

The sustainable use of global biodiversity: scope and relevance of the Nagoya Protocol and the Convention on Biological Diversity for natural history collections and researchers

Molecular Evolution

Mikko Pentinsaari University of Oulu, Department of Genetics and Physiology, Finland

Amino acid variation and protein structure of COI barcodes – insights from a Metazoa-wide sample

Monica R. Young Biodiversity Institute of Ontario, University of Guelph, Canada

Patterns of protein evolution in cytochrome *c* oxidase subunit I (COI) from the class Arachnida

Tzitziki Loeza-Quintana Biodiversity Institute of Ontario, University of Guelph, Canada

An Arctic molecular clock? Genetic divergence in echinoderms across the Bering Strait

Thomas Braukmann Biodiversity Institute of Ontario, University of Guelph, Canada

The plastomes of mycoheterotrophic Ericaceae reveal extensive changes to gene order and rare gene loss

T. Fatima Mitterboeck Biodiversity Institute of Ontario, University of Guelph, Canada

Testing for positive selection in mitochondrial and nuclear energy-related genes in Pterygota (flying insects)

Mark Stoeckle The Rockefeller University, USA

A recent evolutionary origin of most extant animal species? Mitogenome and DNA barcode evidence from humans and other animals

Next Generation Platforms and Analytical Pipelines 2

Ranjith M. T. Kerala Agricultural University, India

Exploring the gut bacterial communities associated with larval *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) based on Illumina next-generation sequencing

Michael Wright Biodiversity Institute of Ontario, University of Guelph, Canada

Assessing benthic macroinvertebrate temporal turnover in a remote wetland through environmental barcoding

Lawrence Wangh Brandeis University, Dept. of Biology, USA

Virtual barcoding: Identification of every animal species in a single closed-tube reaction

Lisa Ledger Biodiversity Institute of Ontario, University of Guelph, Canada

A metabarcoding approach to measuring beta diversity: Costa Rican dry forest arthropods and their associated bacteria

Douglas Yu Kunming Institute of Zoology, China

Higher fungal diversity in dead wood reduces CO₂ emissions in a natural forest

Responses of Biodiversity to Environmental Change

Johan Pansu LECA, University Grenoble Alpes, France

Environmental DNA metabarcoding to investigate historic changes in biodiversity

John James Wilson University of Malaya, Malaysia

Diversity and human perceptions of bees in Southeast Asian megacities

Kong-Wah Sing Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia

Urban parks: refuges for tropical butterflies?

Gemma Collins University of Waikato, New Zealand

Temperature-related activity of *Gomphiocephalus hodgsoni* (Collembola) COI haplotypes in Taylor Valley, Antarctica: Implications in a changing climate

Gina Capretta Biodiversity Institute of Ontario, University of Guelph, Canada

Ecotoxicological applications of DNA barcoding to distinguish lab-cultured organisms: a case study involving *Hexagenia* spp.

William Eaton Pace University, USA

Using metagenomics to show the efficacy of restoration in the New Jersey Pine Barrens

Supporting Laws to Protect Threatened Species

David E. Schindel Consortium for the Barcode of Life, USA

The Barcode of Wildlife Project, Part 1: A systemic barcoding initiative to protect endangered species

Michael Trizna Consortium for the Barcode of Life, USA

The Barcode of Wildlife Project, Part 2: Data pipeline and GenBank submission

Monique Wesselink Netherlands Forensic Institute, The Netherlands

Barcoding forensic traces – practical challenges

Janet Topan Biodiversity Institute of Ontario, University of Guelph, Canada

CSI: Guelph – Forensic applications of DNA barcoding for wildlife identification and food authentication