

Making

international
**BARCODE
OF LIFE**



every

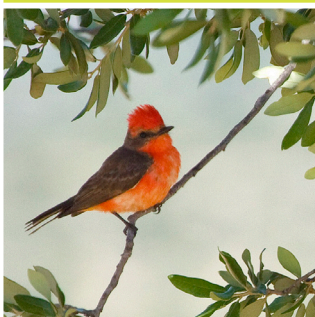
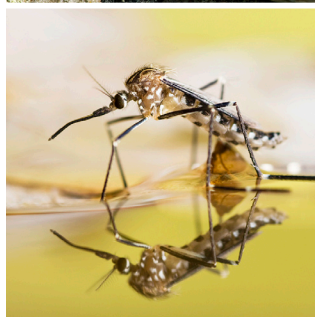
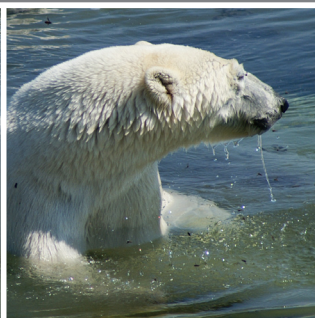


iBOL SCIENTIFIC STEERING COMMITTEE

SECOND MEETING
Guelph, Ontario, Canada
September 23-25, 2010



species



count

WELCOME MESSAGE

Dear Delegates,

Welcome to Guelph, and to the second meeting of the iBOL Scientific Steering Committee. We are excited to see the project celebrate both the success of its preparatory activities over the past year and its formal launch during this International Year of Biodiversity.

In its preparatory phase, iBOL has focused on building the capacity of its supply chain – the core sequencing and informatics facilities needed to extend the DNA barcode library, and to increase the flow of specimens from participating scientists and their working groups. In parallel, we have been engaging partner institutions at national, regional and central node levels, and working closely with the Consortium for the Barcode of Life (CBOL) to promote global development and adoption of DNA barcoding tools and standards. The results of these efforts are represented by the delegates at this meeting – the working group leaders and the node representatives that constitute iBOL's Scientific Steering Committee.

This second SSC meeting, following on from the 2009 assembly in Mexico City, has been designed as a two-way consultation between the iBOL leadership and participants. After a brief overview of the scientific progress and management structure of the iBOL project, most of the meeting will be devoted to discussions designed to help delegates clarify the goals, challenges and strategies of their working groups and nodes. The iBOL leadership will then commit to integrating these new understandings into the project's management scheme and program of work going forward.

Once again, welcome to Guelph, and enjoy the meeting!



Peter Freeman
Executive Director



Christian Burks
Chair, Board of Directors



Paul Hebert
Scientific Director

VENUE AND TRANSPORTATION

All meeting sessions will be held in the Conference Centre at the Delta Guelph Hotel.

Transportation to and from the Toronto Pearson International Airport has been arranged through Red Car Service. Delegates will be transported to evening social events by buses, which will leave from the Delta at the times indicated in the official program.

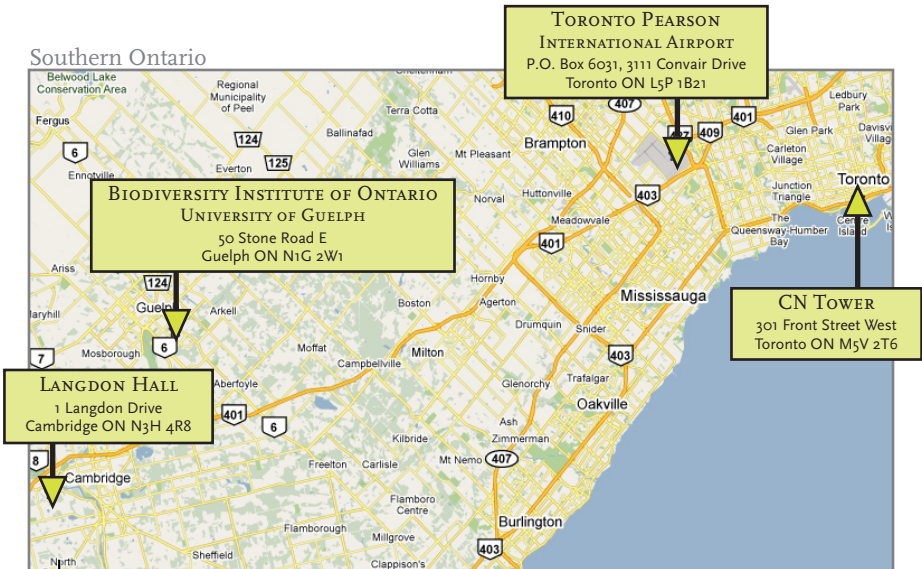
TELEPHONE NUMBERS

Biodiversity Institute of Ontario	519-824-4120 ext. 56393
Delta Guelph Hotel	519-780-3700
Red Car Airport Service	1-519-824-9344
Airport inquiries	Terminal 1: 416-247-7678 Terminal 3: 416-776-5100
Emergency (Fire, Police, Ambulance)	911

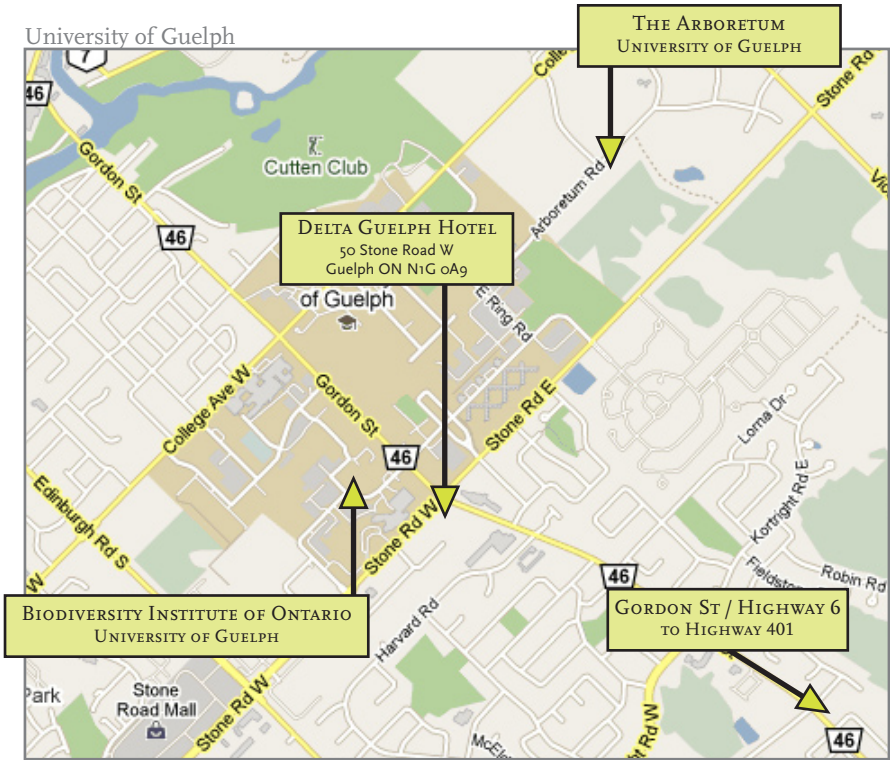
INTERNET ACCESS

The Delta Guelph Hotel offers free wi-fi Internet access in all guest rooms, meeting rooms and common areas.

If you require assistance at any time during the meeting, you can call **519-835-1273**



MAPS AND INFORMATION



MEETING SPONSORS

This meeting was made possible through the generous support of Genome Canada, the Ontario Genomics Institute, the Natural Sciences and Engineering Research Council of Canada, the International Development Research Centre, the Ontario Ministry of Research and Innovation, and the University of Guelph.





George Amato is the Director of the Sackler Institute of Comparative Genomics at the American Museum of Natural History. Current research interests include genetic threats associated with habitat fragmentation in endangered species, molecular ecology, taxonomic and phylogenetic questions related to determining units of conservation, using molecular markers for assessing priority areas for biodiversity conservation, non-invasive sampling techniques for endangered species and monitoring the trade in endangered species products using DNA based forensic science.



Jesse Ausubel is Vice President of Programs with the Alfred P. Sloan Foundation where his main area of responsibility is support of basic research in science and technology. His programs include the Census of Marine Life, the Encyclopedia of Life and the Consortium for the Barcode of Life. Concurrently, Mr. Ausubel is Director of the Program for the Human Environment and Senior Research Associate at The Rockefeller University in New York City, where he has served on the faculty since 1989.



Eldredge Bermingham is the director of the Smithsonian Tropical Research Institute, a unit of the Smithsonian Institution headquartered in Panama City, Panama. He joined the institute's scientific staff in 1989 and served as deputy director and acting director before being appointed director in 2008. He has published over 135 peer-reviewed articles and edited the book *Tropical Rainforests: Past, Present and Future*. Dr. Bermingham earned a degree in biology from Cornell University in 1977 and a PhD in genetics from the University of Georgia in 1986.



Christian Burks is the President and CEO of the Ontario Genomics Institute, drawing on his career in basic and applied research institutions and start-up biotechnology companies: creating, developing, and managing database resources for molecular biology; analysing molecular sequence data; generating and managing genomics and proteomics technology and data to support drug discovery. Dr. Burks was part of a team that created, and was later Principal Investigator for GenBank. He is chair of the iBOL board of directors.



David Castle is a Canadian philosopher and bioethicist. He is currently a Canada Research Chair in Science and Society at the University of Ottawa, but will soon take up a chair at the University of Edinburgh. He received his B.Sc. and BA from the University of Alberta, MA from McMaster University, and PhD from the University of Guelph. His fields of interest are the philosophy of the life sciences, applied ethics and science and technology innovation and his ongoing research is focused on science and technology innovation, science quality, and intellectual property.

 PRESENTERS



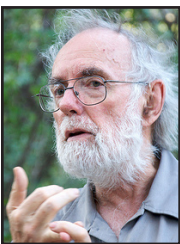
Brian Fisher is curator and chairman of the Department of Entomology at the California Academy of Sciences. He is also executive director of the Bibikely Biodiversity Institute and the Madagascar Biodiversity Center. Dr. Fisher is widely known as a preeminent field biologist focusing on the systematics of arthropods, with particular focus on ants. He has discovered over 1,000 new species. When not pursuing his primary occupation, field work in Madagascar and Africa, Dr. Fisher lives with the banana slugs in a treehouse in Marin County, California.



Peter Freeman is the Executive Director of iBOL and is responsible for the overall operations of the iBOL Secretariat. With a scientific background in biochemistry and plant physiology, Dr. Freeman has a record of successfully coordinating a series of large multi-institutional, international research projects in genomics, proteomics, stem cell research and population health. He also has extensive private sector experience in R&D and operational executive roles in the international malting and brewing industry.



Paul Hebert is the Scientific Director of iBOL and Director of the Biodiversity Institute of Ontario. He completed his PhD in genetics at Cambridge University and postdoctoral fellowships at the University of Sydney and at the Natural History Museum in London before joining the faculty at the University of Windsor in 1976. In 1990 he moved to the University of Guelph, where he holds a Canada Research Chair in Molecular Biodiversity. Dr. Hebert has received several national awards and published more than 300 papers, among them the 2003 paper which is regarded as the beginning of the global DNA barcode enterprise.



Daniel Janzen is an evolutionary ecologist, naturalist, and conservationist. A professor of biology at the University of Pennsylvania, he focuses on research and field work in Costa Rica, where he is technical advisor for two long-term projects: the Guanacaste Conservation Area, one of the oldest, largest and most successful habitat restoration project in the world, and the National Institute of Biodiversity. Janzen's work has influenced the thinking of just about every researcher and student of tropical ecology and conservation in the western hemisphere during the last 40 years.



Scott Miller is Deputy Under Secretary for Science for the Smithsonian Institution, and Curator of Entomology at the Smithsonian National Museum of Natural History. He has a PhD from Harvard University and has published over 160 research publications in systematics, biogeography, and ecology. Dr. Miller serves as Chair of the Executive Committee of the Consortium for the Barcode of Life (CBOL), and has an active research program applying DNA barcodes to the systematics and ecology of moths.



Sujeevan Ratnasingham is the Informatics Director at the Biodiversity Institute of Ontario and the chief architect of the Barcode of Life Data Systems (BOLD) bioinformatics workbench. His principal research activities involve development and use of a range of computational techniques (including knowledge gathering and discovery methods, phylogenetics, machine learning and high performance and grid computing) to facilitate the analysis and linking of molecular, natural history, and systematic data with an overall focus on building the framework to enable high-level research in biodiversity informatics.



David Schindel is the Executive Secretary of the Consortium for the Barcode of Life (CBOL). Before joining CBOL in 2004, he was head of the National Science Foundation's Europe Office located in Paris. Dr. Schindel is an invertebrate paleontologist whose research explored evolutionary theory, computer-based analysis of evolutionary change, and the role of the fossil record in shaping evolutionary theory. He received a B.Sc. in Geology from the University of Michigan and a PhD in Geological Sciences from Harvard in 1979.



Paul Skelton is Managing Director of the South African Institute for Aquatic Biodiversity (SAIAB), located at Grahamstown in Eastern Cape province. He was previously curator of freshwater fishes at Albany Museum in Grahamstown and then at the JLB Smith Institute of Ichthyology, which became SAIAB. Dr. Skelton's research interests include the systematics and biogeography of African freshwater fishes and management of scientific collections and institutions. He is the author of *A Complete Guide to the Freshwater Fishes of Southern Africa*.



Erin Skimson was appointed Director of the Business Development Office at the University of Guelph in May, 2010, after serving in various management roles at Stryker Canada LP, a leading medical device company, since 2003. She has a B.Sc. in Health Education from Dalhousie University and an MBA from McMaster University. She is a recipient of a Canadian International Development Agency (CIDA) grant for work on health education programs in Ecuador.

MEETING AGENDA (OVERVIEW)

THURSDAY SEPTEMBER 23	Afternoon	<ul style="list-style-type: none"> • Arrive at Toronto Pearson International Airport • Transfer to Guelph via Red Car Service • Check in to Delta Guelph Hotel
	Evening	<ul style="list-style-type: none"> • Welcome reception and barbecue at the University of Guelph Arboretum
FRIDAY SEPTEMBER 24	Morning	<ul style="list-style-type: none"> • Registration at Delta Guelph Hotel • Scientific Overview • Management Overview • Group Breakouts I
	Afternoon	<ul style="list-style-type: none"> • Group Breakouts II • Group Presentations • Discussion
	Evening	<ul style="list-style-type: none"> • Delegates Dinner at Langdon Hall
SATURDAY SEPTEMBER 25	Morning	<ul style="list-style-type: none"> • Roadmaps: <ul style="list-style-type: none"> > GE³Ls > Informatics > Scientific • Group Breakouts III
	Afternoon	<ul style="list-style-type: none"> • Group Presentations • Discussions • Closing remarks
	Evening	<ul style="list-style-type: none"> • Official Launch of the iBOL Project • Reception and dinner at CN Tower, Toronto
SUNDAY SEPTEMBER 26	Morning	<ul style="list-style-type: none"> • Depart for Toronto Pearson International Airport

THURSDAY, SEPTEMBER 23

All day	Arrival and transfer to Delta Guelph Hotel	Red Car Service
5:30 pm	Transfer to University of Guelph Arboretum	Red Car Service
6:00 pm	Welcome barbecue and social reception	The Arboretum
10:30 pm	Return to hotel	Red Car Service

FRIDAY, SEPTEMBER 24

7:00 am	Breakfast and Registration	
8:30 am	Opening Remarks Christian Burks, Chair, iBOL Board of Directors	Gryphon/Ken Danby (GKD)
8:45 am	iBOL Scientific Overview Paul Hebert, iBOL Scientific Director	GKD Room
9:30 am	iBOL Management Overview Peter Freeman, iBOL Executive Director	GKD Room
10:15 am	Preparation for Group Breakout Meetings David Schindel, Executive Secretary, CBOL	GKD Room
10:30 am	Coffee Break	
11:00 am	Group Breakout Meetings – Part I	
	A. iBOL Theme 1: The DNA Barcode Library Chair: Scott Miller Working Groups 1.1-1.10	Meeting Room 1 (Bee)
	B. iBOL Themes 2-4: Methods, Technologies and Informatics Chair: Eldredge Bermingham Working Groups 2.1-2.4, 3.1-3.2, 4.1-4.2	Meeting Room 2 (Jellyfish)
	C. iBOL Theme 5: Administration Chair: Erin Skimson Working Groups 5.1-5.2	Terrace Room
12:30 pm	Lunch and Marketplace	GKD Room
2:15 pm	Group Breakout Meeting – Part II	As before
3:15 pm	Coffee Break	
3:45 pm	Breakout Group Presentations	GKD Room
	3:45 Group A – The DNA Barcode Library	
	4:00 Group B – Methods, Technologies, Informatics	
	4:15 Group C – Administration	
4:30 pm	Discussion	GKD Room
5:00 pm	Meeting Adjourns	
5:30 pm	Transfer to Langdon Hall, Cambridge ON	Bus transport
6:30 pm	Reception and Dinner for SSC delegates	Langdon Hall
10:30 pm	Transfer to Delta Guelph Hotel	Bus transport

SATURDAY, SEPTEMBER 25

7:00 am	Breakfast	
8:30 am	Recap on Day 1 David Schindel, Executive Secretary, CBOL	GKD Room
8:45 am	GE ³ LS Roadmap David Castle, Chair, Innovation in Life Sciences, University of Edinburgh	GKD Room
9:15 am	Informatics Roadmap Sujeevan Ratnasingham, Director, Barcode of Life Data Systems	GKD Room
9:45 am	Scientific Roadmap Paul Hebert, iBOL Scientific Director	GKD Room
10:15 am	Preparation for Group Breakout Meetings David Schindel, Executive Secretary, CBOL	GKD Room
10:30 am	Coffee Break	
11:00 am	Group Breakout Meetings – Part III	
	A. Central Nodes Chair: George Amato	Meeting Room 1 (Bee)
	B. Regional Nodes Chair: Paul Skelton	Meeting Room 2 (Jellyfish)
	C. National Nodes Chair: Brian Fisher	Flanders/John McRae Rooms
12:30	Lunch and Marketplace	
2:00 pm	Group Presentations	GKD Room
	2:00 Group A – Central Nodes	
	2:15 Group B – Regional Nodes	
	2:30 Group C – National Nodes	
2:45 pm	Discussion	GKD Room
3:15 pm	Closing Remarks Jesse Ausubel, Vice President, Alfred P. Sloan Foundation	GKD Room
3:30pm	Meeting Close	
4:30 pm	Depart for Toronto CN Tower	Bus Transport
6:30 pm	Official Reception: Launch of the International Barcode of Life	Horizons, CN Tower
7:30 pm	Celebration Dinner	360 Restaurant
10:30 pm	Depart for Delta Guelph Hotel	Bus Transport

SUNDAY, SEPTEMBER 26

7:00 am	Breakfast and Check out	
	Transfer to Toronto Pearson International Airport	Red Car Service

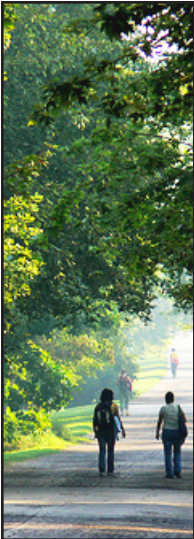


Guelph was founded in 1827 by John Galt of the Canada Company, a British land settlement firm. It was one of Canada's first planned towns, designed to resemble a European city with squares, broad main streets and narrow side streets. The Speed and Eramosa rivers were the focus of Galt's vision, providing drinking water and power for mills. Heavy forests and Lockport dolomite formations along both rivers made the site an even better choice for a major settlement.

Despite these advantages, it wasn't until the Grand Trunk Railroad reached Guelph from Toronto in 1856 that the town really began to grow. During this time many prominent buildings were constructed, mostly by local architects, builders and stonemasons who used the locally quarried amber-hued limestone that gave Guelph a visual unity still evident in older parts of the city.

Guelph quickly became an attractive location for both industry and citizens. By 1915, the city had lively sports and music cultures, a free public library, daily and weekly newspapers, free postal delivery, 18 churches, a public and separate school system and business and agricultural colleges. The city owned its own utilities, street railway system and firefighting force and was home to almost 100 industries.

Guelph is now a vibrant community of 118,000 people. With a leading research university, diverse manufacturing and high-tech enterprises and a thriving and justly famous cultural scene, it is one of the fastest growing regions in Canada.



The Arboretum at the University of Guelph is loosely modeled on the Arnold Arboretum of Harvard University which is 100 years older. Plantings started in 1971 and are now maturing to produce a beautiful landscape, within which The Arboretum continues to develop specialized gardens, botanical collections and gene conservation programs. The Arboretum spans 165 hectares (408 acres) with 8.2 km (5 miles) of signed trails. Thirty-eight species of mammals, 188 species of birds, 39 species of butterflies, 18 herptiles (reptiles and amphibians) have been observed there. The facility's 1,700 species of trees and shrubs include almost every tree and shrub indigenous to southern Ontario.

The Arboretum offers a pleasant stroll or a study of the fabulous diversity in plants. It is also a popular venue for weddings, dinner theatre or memorial services and dedications. A wide array of adult and children's educational programs are also offered covering art, botany, gardening and wildlife. It is a significant visitor attraction as well as an important amenity for the citizens of Guelph and Ontario.

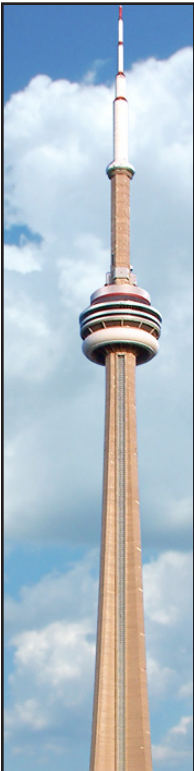
VENUES



Situated on a prominent hillside overlooking the Grand River just outside Cambridge, **Langdon Hall** was the primary residence on the 400 hectare (1,000 acre) Cruikston Park estate. Its origins reflect the wealth accumulated by John Jacob Astor, the first millionaire in the United States whose exploits in real estate and the fur and opium trades were the basis for the Astor family dynasty.

His descendants designed Langdon Hall in the 1890s, employing a style fashionable for grand summer homes. When it was completed in 1902, the house had 32 rooms and 25,000 square feet of floor space, a suitable country home for the Langdon family who also owned a residence on Park Avenue in Manhattan and a chateau in France.

They owned the estate until 1982 when the land was donated to the University of Guelph and the house was sold to be developed into a luxury country house hotel which hosts both travelers and small conferences.



In 1995, the **CN Tower** was classified as one of the Seven Wonders of the Modern World by the American Society of Civil Engineers. Located in downtown Toronto, the CN Tower is a communications and observation tower standing 553.3 metres (1,815 ft) tall.

For more than three decades, it was the tallest free-standing structure in the world until it was surpassed by Dubai's Burj Khalifa in 2007. It remains the tallest free-standing structure in the Western Hemisphere and the world's tallest tower, according to the Guinness Book of World Records 2010.

The official launch of iBOL will be celebrated with a dinner at the tower's world famous revolving restaurant, which makes one full revolution every 72 minutes. *360 The Restaurant* at the CN Tower, one of Toronto's finest, features unforgettable food combined with a magnificent revolving view of Toronto more than 351 metres (1,151 ft) below.

360 The Restaurant features the highest wine cellar in the world. Created to resemble a typical underground wine cellar, it features precision climate and humidity controls, redwood racks, double cherry doors, a 9,000 bottle storage capacity and a tasting table.

The CN Tower is the signature icon of Toronto's skyline and a symbol of Canada, attracting more than two million international visitors annually.

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