Fourth International Barcode of Life Conference: Short Course on DNA Barcoding Methods
November 29, 2011

9:00 – 10:00. Module I: Introduction to Barcoding and its pipeline

- 9:00. Brief introduction to barcoding and the current goals and campaigns/working groups (iBOL context) (Darío Lijtmaer)
- 9:20. The barcoding pipeline (Amy Driskell)
  - What is the barcoding pipeline?
  - What data and objects need to be tracked through the pipeline?
  - What possible entry and exit points exist?
- 9:40. Barcode Data Standard compliance (David Schindel)
  - Vouchering and archiving of vouchers
  - Imaging and archival of e-vouchers
  - Provenance data quality
  - Sequence and trace file quality

10:00 – 12:30. Module II: Acquisition and Handling of specimens and tissue samples

- 10:00. Pros and cons of collecting specimens for barcoding vs. sampling existing collections (Sally Adamowicz)

(10:30 – 11:00. Coffee break)

- 11:00. Field Collection (Sally Adamowicz)
  - Legal issues
  - Logistics
  - Data quality and acquisition (overview of available field data entry tools)
  - Collection/preservation methods
- 11:30. Museum Harvesting (Jeremy deWaard)
  - Deciding which collections to use
  - Deciding which specimens/samples to use
  - Destructive vs. non-destructive handling; voucher recovery protocols
  - Biological material transfer policies
- 12:00. Front-end processing (Michelle Van der Bank)
  - Specimen arraying, databasing, imaging, sampling
  - Pre-lab challenges and solutions:
    - a) Individual tracking of collection specimens
    - b) Avoiding human error when working with large batches of specimens
    - c) Streamlining front-end processing of large specimen batches

12:30 – 14:00. Lunch

14:00 – 15:30. Module III: Brief description of laboratory methods and information management for small, medium and large-scale facilities

- 14:00. DNA Extraction (Darío Lijtmaer)
  - Equipment
  - Methods/protocols
  - Storage and shipment of DNA extracts
- 14:30. PCR Amplification (Darío Lijtmaer)
  - Equipment
  - Methods/protocols
  - PCR product verification
  - Shipment of PCR products
- 15:00. Information management and data quality (Amy Driskell)
  - Tracking progress through the laboratory pipeline
  - Keeping all required products together
  - Consistent data assessment
  - Analysis-lab feedback loop
  - Key elements of a data management database (LIMS)

(15:30 – 16:00. Coffee break)

16:00 – 17:30. Module IV: Taxon-specific aspects of the barcoding pipeline

- 16:00. Short talks about taxon-specific key elements to take into consideration
  - 16:00. Plants (Dave Erickson)
  - 16:10. Algae (Gary Saunders)
  - 16:20. Fungi (Benjamin Stielow)
  - 16:30. Marine invertebrates (Dirk Steinke)
  - 16:40. Terrestrial invertebrates (Julie Stahlhut)
  - 16:50. Vertebrates (Bob Ward)
- 17:00. Round table for Q&A and discussions about taxon-specific aspects of the pipeline