

**Centre for Ecological Research, Institute of Ecology and Botany, Vácrátót**  
**report on progress made between 01/04/2019 and 31/08/2020**  
**László Zsolt Garamszegi - director**

*1. scientific achievements (publications, projects, research groups, scientific strategy)*

- Improved publication output (both in terms of the number of publications and impact)
  - number of papers published per year in 2019 and 2020 increased by 1.5 compared to the period 2014-2018 (from 57 to 90)
  - 2020 (as of 30/06/2020): summa IF > 300, 86% of papers in Q1
- Intense application efforts for national and international project grants
  - high success in the main national program (8 grants won from the NKFIH/NRDI Office)
  - Péter Batary wins in the Frontline excellence programme (2020, NKFIH/NRDI Office)
  - Orsolya Valkó brings “Momentum” (Lendület) Programme to the institute (2019, Hungarian Academy of Sciences)
  - COST Action CA18207 membership
  - 2 Premium post-doc (2019, Hungarian Academy of Sciences)
  - 2 ERC grants submitted
  - 2 H2020 grants submitted
  - 1 LIFE 2020 grant submitted
- Developed strategy for 9 major themes (application plans for the future)
- New research groups bringing new research topics
  - Evolutionary Ecology Research Group
  - Lendület Seed Ecology Research Group
- Terminating unproductive and vulnerable research groups with uncertain future
  - Laboratory for Lichenology and Phytochemistry
  - Functional Community Ecology Research Group
- Dynamically organized working groups that span over existing research groups and focus on current environmental challenges with high social and economical impacts
  - Ecologically sustainable forest management based on concepts from forest ecology
  - Ecology of invasive species (both plants and animals)
  - Ecological surveillance and control of mosquitoes with disease transmitting potential
  - Experimental approaches to study the ecological consequences of climate change (field and greenhouse)

- Dealing with human-induced rapid environmental change: ecological background and practice (urban ecology, ecosystem services, landscape and conservation ecology, ecological restoration)
- Improved visibility towards the general public (~ 400 media appearances, with an active participation of ~20 researchers)
- International working environment
  - Weekly seminars in English
  - The permanent presence of 10 foreign researchers (M.Sc. – Ph.D. – post-docs)
- *Talentia* program: an active discussion group for young researchers (journal clubs, workshops, sessions of presentation practice, brainstorming sessions, e-mail list)
- Organization of conferences, workshops, scientific events
  - SQuID (international workshop and Ph.D. course)
  - SZKUB (national conference on newly emerging infectious diseases)
  - KÖSzi (national conference on quantitative ecology)
  - SCCS Europe 2020 (international conference for students on conservation science)
  - Urbanizációs Ökológiai Konferencia (national conference on urban ecology)
- Statistical education
  - Ph.D. course
  - Discussion group
- Stimulating working environment
  - Frequent round-table discussions on issues with common interest (both scientific and practical matters)
  - Social events

## 2. *Management*

- Dealing with the permanent shortage of office space
  - Redistribution of space based on scientific output
  - Assignment of fixed and floating spaces (e.g. Ph.D. students share the same desk but use them on different days)
  - Physically separating scientific and non-scientific staff (non-scientific staff moved into a separate building)
- The set-up of a molecular ecology lab (PCR) in progress from a fund of the Hungarian Academy of Science
- Renovations
  - 3 laboratories (incl. furniture and equipment)

- Some offices (windows, painting, furniture)
- Voluntary efforts to improve common areas (discussion rooms, kitchens, wall of fame, bulletin board)
- 4 buildings from a fund of the Hungarian Academy of Science (roof, drainage system, ventilation system)
- Clearance (disposal of 3 containers of rubbish)
- Renewal of the National Botanical Garden (functioning as a department of the Institute)
  - New concept, direction and structure
  - Complete modernization in progress (intense lobby for the appropriate funding at the relevant authorities)
  - Increasing number of visitors (increasing income)
  - “Ecology, culture and botany”, a new concept for reaching the public: combining the dissemination of scientific results with cultural events and the authentic atmosphere of the Garden
- New regulations for booking *on site* accommodations (apartments, guest rooms)
- Developed strategy for hosting school classes
- Strategy for recycling waste collection

### 3. Further plans

- To develop an evaluation scheme for research groups
- To discharge non-competitive staff
- To attract more competitive researchers and groups
- To improve publication output (*Science, Nature* papers with leading role)
- To improve success in applications for international funding
- To improve internationalization (i.e. hosting a respected senior scientist, junior group leaders)
- To create new positions to improve supporting staff (e.g. financial adviser, grant office, cleaner)
- To fulfill complete renovation (incl. new buildings, scientific and non-scientific areas, botanical garden)
- To build new/improve infrastructure for leading research lines (molecular laboratories, experimental rooms, greenhouses)
- To complete an inventory and perform further clearance, which would allow a more effective use of space

**Centre for Ecological Research, Danube Research Institute, Budapest-  
Debrecen**

**Report on progress  
between 01/04/2019 and 31/08/2020  
Zsolt Végvári (director)**

*1. Scientific achievements (publications, projects, research groups, scientific strategy)*

- Substantially improving publication output, both in quality (annual cumulative impact of Q1/D1 papers) and quantity (annual cumulative impact of Q1/D1 papers)
  - number of papers published per year in 2019 and 2020 increased by 1.6 compared to that of the period 2014-2018 (from 52 to 81)
  - 2020 (as of 31/07/2020): summa IF > 165, 78% of papers in Q1
- Intensive application efforts for national and international project grants
  - Successful participation in the main national program:
  - 11 grants won from the NKFIH/NRDI Office
  - 9 submitted
  - 3 H2020 grants submitted
  - 2 LIFE 2020 grant submitted
  - Key ongoing projects:
    - - Clean Drinking Water Project within the National Excellence Programme framework
    - - Joint Danube Survey
- Establishment of new research groups with emerging new research topics:
  - Conservation Ecology Research Group
  - Wetland Ecology Research Group
  - (both embedded in the Department of Tisza Research)
- Dynamically organized working groups that span DRI and BLI and focus on current environmental challenges with high social and economical impacts:
  - Environmental Toxicology Research Group
  - Fish and Conservation Ecology Research Group
- Improved visibility towards the general public (~ 250 media appearances, with an active participation of ~15 researchers)
- International working environment
  - Monthly seminars in English
  - Weekly journal clubs jointly with the ÉLVONAL SHOREBIRD SCIENCE team

- Organization of conferences, workshops, scientific events
  - Modeling Population Dynamics (Debrecen, January 2019)
- Intensive participation in university (MSc, PhD) education:
  - Animal and plant ecology
  - Statistics
  - Conservation biology
  - Ph.D. course
- Stimulating working environment
  - Frequent round-table discussions on issues with common interest (both scientific and practical matters)
  - Social events

## 2. *Management*

- Addressing the permanent shortage of office space
- Renovations
  - 3 laboratories acquired from ATOMKI (including furniture and equipment)
  - Continuous renovations in the Karolina building
  - New regulations for booking *on site* accommodations (guest rooms)
- New strategy for recycling waste collection
- New management plan for treating hazardous waste materials
- New lab equipment:
  - epifluorescent microscope
  - DNA isolator
  - on-line biofilm sensor
  - Multicav 600 MB filter
  - microwave digester exploration set

## 3. *Further plans*

- Developing an evaluation scheme for research groups
- Discharging non-competitive staff
- Attracting more competitive researchers and groups
- Aiming at obtaining a new institute building
- Developing the data repository of CER
- Appointing Krisztina Buczkó as the leader of Department of Environmental Chemistry and Plant Ecology
- Improving publication output in leading, high-profile journals

- Improving success in applications for international funding
- Improving international networking, including hosting respected senior scientists and junior group leaders
- Creating new positions to improve supporting staff (e.g. financial adviser, grant office)
- Extending the laboratory space of Department of Tisza Research
- Completing renovations (incl. new buildings, scientific and non-scientific areas)
- Improvement of lab equipment:
  - Improvements of the existing DNA lab
  - Refrigerator
  - Microscope improvements
  - Climate chamber

**Centre for Ecological Research, Institute of Evolution, Budapest**  
**report on progress made between 01/08/2019 and 31/08/2020**  
**Tamás Czárán - director**

*1. scientific achievements (publications, projects, research groups, scientific strategy)*

- High publication output (both in terms of the number of publications and impact)
  - 46 published scientific articles in the 2019-2020 period
  - cumulative IF > 200, most of the papers in D1 abd Q1, incl. (*Science, Nat. Rev. Chem., Trends Ecol. Evol.*, etc.)
- Intense application efforts for national and international project grants
  - Frontline excellence grant (2019, NKFIH/NRDI Office)
  - FET-OPEN grant submitted (Darwinian chemical technology)
  - FindingPheno (Unified computational solutions to disentangle biological interactions in multi-omics data, consortial)
  - Simons-Moore Foundation (Resolving the prokaryote-to-eukaryote transition using new phylogenomic models of endosymbiosis, consortial)
  - EvoGamePlus (Evolutionary games and population dynamics: from theory to applications, Training network, consortial)
- Developed strategy for 3 major themes (application plans for the future)
- New research directions and dynamically organized working groups
  - Evolutionary robotics

- Emerging diseases, the DAMA protocol
- High visibility towards the general public (~ 50 media appearances, with an active participation of ~10 researchers)
- *Hungary and Climate Change* (in Hungarian). Pop science book edited by Szathmáry, Osiris, 2020.
- International working environment
  - hosting of 3 visiting professors (from 4 months to 12 months)
- Organization of conferences, workshops, scientific events
  - Darwin days – becoming regular
- Senior Guest Resercher Programme by the Academy
  - Prof. Mauro Santos, Autonomous University of Barcelona (very productive: Science, PLoS Genetics, etc.) in 3 months
- Education at different universities
  - Ecology, evolution, mathematical modelling, statistics
  - Ph.D. courses
  - Szathmáry: Head of the theoretical biology programme

## 2. *Management*

- The set-up of an evolutionary robotics lab with 35 robots
- Search for the funding to set-up a molecular ecology lab (PCR) for the emerging diseases group
- Full renovation and set-up of the new seat of the Institute (approx. 600 m<sup>2</sup>)
  - 16 offices for researchers
  - 2 laboratories
  - discussion rooms, kitchen, etc.

## 3. *Further plans*

- To develop an evaluation scheme for research groups
- To attract more competitive researchers
- To enhance evolutionary robotics research
- To include ecological economics and finance
- Resurrect astrobiological research (partly ESA-funded)
- To improve success in applications for international funding
- To improve internationalization (i.e. hosting a respected senior scientist, junior group leaders)
- To create new positions

**Progress report**  
**Centre for Ecological Research, Balaton Limnological Institute (BLI),**  
**Tihany**

**1 April 2019 – 23 August 2020**  
**Ferenc Jordán, director**

*1. Achievements*

*1.1. Research, projects, strategy*

- Research Groups have been re-organized in order to establish functioning units (e.g. General Limnology Research Group). Two novel groups work jointly with the Danube Research Institute (Environmental Chemistry and Ecotoxicology Research Group, Fish and Conservation Ecological Research Group). Two other new groups have been created (Metacommunity Ecology Research Group, Experimental Systems Ecology Research Group).
- Assistants are ordered to laboratories and tasks, not to persons (in progress).
- New Research Groups are being shaped (e.g. Microbial Ecology Research Group).
- Major project applications have been submitted, two of them are winners (H2020 AtlantECO, H2020 AQUACOSM-PLUS), both around 10 M EUR, consortial. BLI is WP leader and Task leader, respectively.
- Recently hired researchers represent Western quality and research culture.
- Our visibility has been increased dramatically, media appearance abund, young colleagues are continuously applying for positions. We have increased our prestige in the society and in decision-making (as far as possible).

*1.2. Management*

- Two small rooms have been united, renewed and a modern Invertebrate Ecology laboratory has been constructed (furniture under construction).
- Four small rooms have been united and a modern Zooplankton laboratory has been constructed and works with full capacity.
- Four offices have been modernized and furnished. Recently hired researchers and some students work here.
- A poor-quality tennis court has been changed to an experimental mobile mesocosm facility. International collaboration (H2020) runs here.



- Social spaces have been developed and constructed (cafeteria, table tennis, new stairs at the shore, best publications table).
- Security has been increased (new lifebelts on the coast, dangerous waste has been managed (partly), a large amount of garbage has been transported, selective dustbins have been installed, coffee machine in the lab has been re-located).
- For improving our visibility, we have corrected the name of the Institute and the streetsign, we developed a two-hour long programme for visiting groups of schoolkids, we organized our Open Day with record number of visitors.
- There is new regulation for the Guest House, for fishing at the Institute, for the library catalogue, for booking vehicles, for booking the lecture room, for entry cards.
- New colleagues have been hired for nightwatchman, receptionist and fellow service positions.
- We hired several excellent young researchers (Horváth Zs., Vad Cs., Szabó B., Tabi A., Barta B., Bánó B.) and technicians (Glatz K., Kardos V., Maroskövi B.).

## *2. Further challenges*

- Personnel needs to be improved
- The quality of guest flats needs to be improved
- Office and lab space needs to be optimized
- Lots of garbage still needs to be transported
- The port must be modernized
- Port contracts need to be reconsidered
- The top floor of the Cholnoky building has to be renewed and utilized
- The top floor of the Wolsky building has to be renewed
- The isotope lab needs to be regulated and modernized