

## Cuba



### Legend

|                                                                |  |                                          |  |
|----------------------------------------------------------------|--|------------------------------------------|--|
| Universidad de la Habana                                       |  | Universidad de Cienfuegos                |  |
| Universidad Central "Marta Abreu" de las Villas                |  | Universidad de Holguín                   |  |
| Universidad de Oriente                                         |  | Universidad de Camagüey                  |  |
| Universidad "José Martí Pérez"                                 |  | Universidad de Pinar del Río             |  |
| Universidad Tecnológica de la Habana "José Antonio Echevarría" |  | Universidad de las Ciencias Informáticas |  |
| Universidad de Granma                                          |  | Universidad Agraria de la Habana         |  |
| Centro de Neurociencias de Cuba                                |  | Centro Nacional de Sanidad Agropecuaria  |  |
| Institute of Tropical Medicine "Pedro Kouri"                   |  | Universidad de las Artes                 |  |

| Projects 2003-2019 |                   |           |
|--------------------|-------------------|-----------|
| Type               | Budget (€)        | Number    |
| <b>Total</b>       | <b>22 039 572</b> | <b>82</b> |
| IUC                | 10 745 000        | 2         |
| Networks           | 1 795 000         | 1         |
| TEAM               | 6 996 894         | 27        |
| SI                 | 1 122 164         | 22        |
| RIP                | 299 294           | 3         |
| Crosscutting/JOINT | 1 081 220         | 27        |

| Ongoing projects in 2019 |                    |           |
|--------------------------|--------------------|-----------|
| Type                     | Budget in 2019 (€) | Number    |
| <b>Total</b>             | <b>1 941 225</b>   | <b>25</b> |
| IUC                      | 570 000            | 1         |
| Networks                 | 250 000            | 1         |
| TEAM                     | 807 193            | 14        |
| SI                       | 165 119            | 5         |
| RIP                      | 21 068             | 1         |
| Crosscutting/JOINT       | 127 845            | 3         |

| Scholarships 2003-2018 (individual scholars) |                |            |
|----------------------------------------------|----------------|------------|
| Type                                         | Budget (€)     | Number     |
| <b>Total</b>                                 | <b>525 836</b> | <b>129</b> |
| <b>Short term</b>                            |                |            |
| <b>Subtotal</b>                              | <b>358 914</b> | <b>123</b> |
| ITP                                          | 148 730        | 23         |
| KOI                                          | 12 219         | 6          |
| REI*                                         | 83 590         | 79         |
| Other scholarships                           | 114 375        | 15         |
| <b>Study</b>                                 |                |            |
| <b>Subtotal</b>                              | <b>166 923</b> | <b>6</b>   |
| ICP                                          | 166 923        | 6          |

| Scholarships 2003-2018 (project scholars) |            |            |
|-------------------------------------------|------------|------------|
| Type                                      | Budget (€) | Number     |
| <b>Total</b>                              | <b>n/a</b> | <b>319</b> |
| <b>Short term</b>                         | <b>n/a</b> | <b>215</b> |
| <b>Study</b>                              | <b>n/a</b> | <b>50</b>  |
| <b>Phd</b>                                | <b>n/a</b> | <b>54</b>  |

\*Travel grants 2017 has not yet been finalised.

## List of projects 2003-2019

| Type     | Runtime   | Title                                                                                                                                           | Flemish promoter                     | Local promoter          | Local institution                                                              | Total budget (€) |
|----------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------|--------------------------------------------------------------------------------|------------------|
| IUC      | 2003-2014 | Institutional University Cooperation with Universidad Central "Marta Abreu" de las Villas (phase 1, phase 2 and phase-out)                      | E. Van Driessche (VUB)               | A.R. Gonzalez           | Universidad Central "Marta Abreu" de las Villas                                | 6.655.000        |
| IUC      | 2013-2022 | Institutional University Cooperation with Universidad de Oriente (UO) (phase 1 and phase 2)                                                     | H. Sahli (VUB)                       | H.C. Fals<br>T.O. Ratón | Universidad de Oriente                                                         | 5.630.000        |
| Networks | 2013-2022 | Network ICT (phase 1 and phase 2)                                                                                                               | G. Eisendrath (VUB)<br>A. Nowé (VUB) | H.C. Enriquez           | Universidad Central "Marta Abreu" de las Villas                                | 2.545.000        |
| TEAM     | 2005-2011 | Capacity building of UNAH and CENHICA in view of a soil and water conservation programme in the Rio Cuyaguaje watershed in Western Cuba         | D. Gabriëls (UG)                     | M.E. Ruiz               | Universidad Agraria de la Habana                                               | 309.898          |
| TEAM     | 2006-2011 | A Cuban-Flemish training and research program in medical statistics and bioinformatics                                                          | G. Molenberghs (UH)                  | J.V. Valdes             | Universidad de la Habana                                                       | 299.783          |
| TEAM     | 2008-2012 | Production and evaluation of antigens from Mycobacterium tuberculosis and Dengue virus as tools in diagnostics and for vaccine development      | J. Anné (KUL)                        | C. Vallín               | Centre for Pharmaceutical Chemistry                                            | 236.547          |
| TEAM     | 2008-2013 | Saline Crops solve soil salinity in Eastern Cuba: institutional strengthening and capacity building for research and development                | R. Samson (UA)                       | R.C.L. Sánchez          | Universidad de Granma                                                          | 302.641          |
| TEAM     | 2008-2014 | HIV drug resistance testing in Cuba                                                                                                             | A.-M. Vandamme (KUL)                 | V.K. Cardellá           | Instituto de Medicina Tropical "Pedro Kourí"                                   | 309.611          |
| TEAM     | 2008-2011 | Establishing a Centre for Cleaner Production to contribute to the socio-environmental development of the province of Cienfuegos, Cuba           | L. Hens (VUB)                        | P.A. Ochoa              | Universidad de Cienfuegos                                                      | 262.862          |
| TEAM     | 2009-2014 | Improvement of Cuban Dairy Cattle Genetics as an Aid to Increase Milk Production Potential                                                      | P. Bols (UA)                         | R.D. Garcia             | Centro de Investigaciones para el Mejoramiento Animal de la Ganadería Tropical | 271.016          |
| TEAM     | 2009-2014 | Biogas production from waste from local food, wood and sugar cane industries for increasing self-sufficiency of energy in Sancti Spiritus, Cuba | J. Dewulf (UG)                       | O. Romero               | Universidad "José Martí Pérez"                                                 | 328.995          |
| TEAM     | 2009-2014 | Knowledge cell on biofuels (from non-edible crops and waste products) for use in internal combustion engines                                    | R. Sierens (UG)                      | L.G. Pérez              | Universidad Tecnológica de la Habana "Jose Antonio Echeverría"                 | 322.649          |
| TEAM     | 2011-2015 | Molecular characterisation and valorisation of Cuban natural products                                                                           | W. Vanden Berghe (UA)                | R.D. Hernández          | Drug Research and Development Center                                           | 299.574          |
| TEAM     | 2011-2015 | A Cuban-Flemish formation and research program in biomechanics and biomaterials                                                                 | P. Segers (UG)                       | T.R. Moliner            | Universidad Tecnológica de la Habana "Jose Antonio Echeverría"                 | 299.758          |
| TEAM     | 2015-2018 | A Cuban network of cleaner production (CP) centres and strengthening education and research on CP                                               | D. Haeseldonckx (KUL)                | J.J.C. Eras             | Universidad de Cienfuegos                                                      | 269.566          |
| TEAM     | 2015-2018 | Arbuscular Mycorrhizal Fungi (AMF) as an efficient tool to improve the agricultural production of small scale local farmers in Cuba             | G. Haesaert (UG)                     | K.H. Suárez             | Universidad Agraria de la Habana                                               | 299.816          |

## List of projects 2003-2019

| Type | Runtime   | Title                                                                                                                                                                                                                              | Flemish promoter        | Local promoter   | Local institution                                              | Total budget (€) |
|------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|----------------------------------------------------------------|------------------|
| TEAM | 2016-2020 | Implementation of a state of the art reference center for pharmaceutical and pharmacological studies in Cuba, to support the use of natural product formulations composed of indigenous phytomedicinal and nutraceutical molecules | L. Pieters (UA)         | R.D. Hernández   | Universidad de la Habana                                       | 299.014          |
| TEAM | 2016-2020 | Vibration-based assessment of civil engineering structures (VIBRAS)                                                                                                                                                                | G. Lombaert (KUL)       | E.L.C. Méndez    | Universidad Central "Marta Abreu" de las Villas                | 294.071          |
| TEAM | 2016-2020 | Implementation of personalized medicine and pharmaco(epi)genetic biomarkers for costeffective                                                                                                                                      | W. Vanden Berghe (UA)   | I.R. Guerra      | Centre of Marine Bioproducts                                   | 299.236          |
| TEAM | 2017-2020 | A Cuban National School of Neurotechnology for Cognitive Aging                                                                                                                                                                     | D. Marinazzo (UG)       | P.A. Valdes-Sosa | Centro de Neurociencias de Cuba                                | 299.596          |
| TEAM | 2017-2020 | Eco-friendly multidisciplinary approaches for controlling and harnessing Marabú ( <i>Dichrostachys cinerea</i> ) in central eastern Cuba                                                                                           | S. De Neve (UG)         | L.F. Vila        | Universidad de Camagüey                                        | 299.608          |
| TEAM | 2017-2020 | Gait Assessment Lab, an Engineering approach (GALEN)                                                                                                                                                                               | P. Segers (UG)          | T.R. Moliner     | Universidad Tecnológica de la Habana "Jose Antonio Echeverría" | 299.960          |
| TEAM | 2017-2020 | In vitro Plant biotechnology to increase food security in eastern Cuba                                                                                                                                                             | S. Werbrouck (UG)       | J.J.S. Pupo      | Universidad de Granma                                          | 300.000          |
| TEAM | 2017-2020 | Installing a center of excellence in the Central-Eastern region of Cuba to enhance production and research on bioactive plants                                                                                                     | P. Cos (UA)             | E. Molina        | Universidad de Camagüey                                        | 299.889          |
| TEAM | 2017-2020 | Renewable energy and bioclimatic architecture improving sustainability and development in ecotouristic settlement: Las Terrazas                                                                                                    | A. Janssens (UG)        | L.A.R. Guzmán    | Universidad Tecnológica de la Habana "Jose Antonio Echeverría" | 300.000          |
| TEAM | 2018-2021 | Improving the Synthetic Chemistry Expertise of the Cuban Academic Sector to Support the Development of Products and Applications for the Agrochemical and Phar-                                                                    | E. Van der Eycken (KUL) | E. O. Rodríguez  | Universidad de La Habana                                       | 279.932          |
| TEAM | 2018-2021 | Capacity building of a compound screening facility for Cuban-developed bioactive compounds targeting cell death and inflammation                                                                                                   | P. Vandenabeele (UG)    | G.P. Andreu      | Universidad de La Habana                                       | 279.627          |
| TEAM | 2018-2021 | Improvement of shrimp culture using transgenerational conditioning in Cuba                                                                                                                                                         | P. Bossier (UG)         | A. Arenal        | Universidad de Camagüey                                        | 276.016          |
| TEAM | 2019-2022 | Control of antimicrobial resistance in bacteria of animal origin in Cuba in order to improve animal and human health                                                                                                               | P. Butaye (UG)          | I. Espinosa      | Centro Nacional de Sanidad Agropecuaria                        | 279.847          |
| TEAM | 2019-2022 | Improving Cow Milk Production Potential by Introducing a Herd Health Management Program on Camagüey's Dairy Farms in Cuba                                                                                                          | P. Bols (UA)            | G. Garay         | Universidad de Camagüey                                        | 265.562          |
| SI   | 2003-2004 | Follow-up project to an Own Initiative with Instituto Superior Politécnico "José Antonio Echevarría"                                                                                                                               | E. Wettinck (UG)        | L.G. Pérez       | Universidad Tecnológica de la Habana "Jose Antonio Echeverría" | 3.888            |
| SI   | 2007-2008 | Maintenance strategy for engines to reduce fuel consumption (energy), emissions (environment) and the increase of corporate reliability (profitability)                                                                            | R. Sierens (UG)         | L.G. Pérez       | Universidad Tecnológica de la Habana "Jose Antonio Echeverría" | 4.188            |
| SI   | 2007-2008 | Fermentation of organic waste from agriculture, forestry and sugar production from sugarcane for biogas production in Sancti Spiritus                                                                                              | J. Dewulf (UG)          | O. Romero        | Universidad "José Martí Pérez"                                 | 6.476            |

## List of projects 2003-2019

| Type | Runtime   | Title                                                                                                                                                                       | Flemish promoter        | Local promoter      | Local institution                                              | Total budget (€) |
|------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|----------------------------------------------------------------|------------------|
| SI   | 2007-2007 | The preservation of the vitro grown plant tissue cultures and application for the production of secondary metabolites with potential to control economically important      | D. Geelen (UG)          | M. Martinez-Montero | Centro de Bioplasmas                                           | 8.424            |
| SI   | 2012-2014 | Computational techniques for engineering applications                                                                                                                       | D. Roose (KUL)          | C.R. Morfa          | Universidad Central "Marta Abreu" de las Villas                | 49.495           |
| SI   | 2012-2014 | Microwave-assisted synthesis of hybrid compounds based on privileged structures: addressing technical capability on different scales                                        | E. Van der Eycken (KUL) | E.O. Rodríguez      | Universidad de la Habana                                       | 66.076           |
| SI   | 2013-2015 | Cleaner production in the city of Cienfuegos, Cuba and sustainability of the city                                                                                           | C. Vandecasteele (KUL)  | J.J.C. Eras         | Universidad de Cienfuegos                                      | 74.905           |
| SI   | 2013-2015 | Food security, commercialization and regional development networks                                                                                                          | M. Loopmans (KUL)       | R.G. Sousa          | Universidad de la Habana                                       | 72.844           |
| SI   | 2013-2015 | Functional characterisation of antimicrobial peptides from marine invertebrates with potential use as therapeutics                                                          | J. Tytgat (KUL)         | E.P. Bravet         | Centre for Pharmaceuticals Research and Development            | 74.869           |
| SI   | 2013-2015 | Strengthening local capacities for food sustainability in agricultural communities: a case study from the municipality of Calixto García (Eastern Cuba)                     | L. Vranken (KUL)        | N.A. Pérez          | Universidad de Holguín                                         | 73.316           |
| SI   | 2013-2015 | Structure-activity analysis of a novel peptidase inhibitor from the Caribbean spiny lobster, <i>Panulirus argus</i> . A scaffold for development of biopharmaceutical leads | J. Vanden Broeck (KUL)  | R. Perdomo-Morales  | Centre for Pharmaceuticals Research and Development            | 74.732           |
| SI   | 2013-2015 | The effect of helminth infections on dairy productivity in Camagüey province, Cuba                                                                                          | J. Vercruyse (UG)       | R. Guevara          | Universidad de Camagüey                                        | 74.910           |
| SI   | 2014-2016 | Improving sustainable shrimp larviculture in Cuba                                                                                                                           | P. Bossier (UG)         | A. Arenal           | Universidad de Camagüey                                        | 75.000           |
| SI   | 2014-2016 | High performance computing software for bioinformatics applications                                                                                                         | D. Roose (KUL)          | R. Trujill-Rasúa    | Universidad de las Ciencias Informáticas                       | 74.708           |
| SI   | 2014-2016 | Ecophysiological characterization of <i>Coccoloba uvifera</i> L.: The case of a salt and drought stress tolerant plant species for sand dune reclamation in Cuba            | R. Samson (UA)          | R.C.L. Sánchez      | Universidad de Granma                                          | 67.216           |
| SI   | 2014-2016 | Emulsified systems for biofuels. Assessment of their performance in diesel engines                                                                                          | S. Verhelst (UG)        | R.P. Rodriguez      | Universidad Tecnológica de la Habana "Jose Antonio Echeverría" | 71.968           |
| SI   | 2017-2018 | Strengthening co-responsible elderly care in current Cuban context through gender equity mainstreaming and elder's wellbeing                                                | P. Bracke (UG)          | A.I. Peña           | Universidad de la Habana                                       | 50.326           |
| SI   | 2018-2019 | Characterization of fungi and mycotoxins in the bean chain in the province of Mayabeque, Cuba                                                                               | S. De Saeger (UG)       | A. Escobar          | Centro Nacional de Sanidad Agropecuaria                        | 68.134           |
| SI   | 2019-2020 | AIR@PORT: Low-cost decision support system to evaluate the impact of ships on the air quality in the port city Cienfuegos                                                   | W. Jacobs (HZS)         | L.H. Santana        | Universidad Central "Marta Abreu" de las Villas                | 69.992           |
| SI   | 2019-2020 | TIME-LABS: Cuba Photography Missions                                                                                                                                        | B. Danckaert (AP)       | O.R. Gonzales       | Universidad de las Artes                                       | 69.939           |

## List of projects 2003-2019

| Type         | Runtime   | Title                                                                                                                          | Flemish promoter       | Local promoter | Local institution                               | Total budget (€) |
|--------------|-----------|--------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------|-------------------------------------------------|------------------|
| SI           | 2019-2020 | Knowledge transfer of new techniques for defining factors influencing Dengue/Zika infection evolution in Cuba                  | X. Van Ostade (UA)     | B. Sierra      | Institute of Tropical Medicine "Pedro Kouri"    | 69.985           |
| SI           | 2019-2020 | Play! for food: Improving food production and social welfare in the province of Camagüey                                       | W. Verbeke (VUB)       | I.M.G. Torres  | Universidad de Camagüey                         | 69.979           |
| JOINT        | 2018-2020 | A Cuban-Flemish Training and Research Program in Data Science and Big Data Analysis                                            | D. Valkenburg          | C. Bouza       | Universidad de La Habana                        | 107.988          |
| JOINT        | 2019-2021 | Quality control and monitoring of scientific research output on national and institutional level                               | M. Goovaerts (UH)      | Y.M. Lahera    | Universidad de La Habana                        | 120.702          |
| JOINT        | 2019-2021 | Strengthening Research Practice in Biopharmaceutical In Silico Modelling through Scientific Computing                          | D. Roefs (UG)          | H.C. Enriquez  | Universidad Central "Marta Abreu" de las Villas | 134.697          |
| RIP          | 2014-2017 | Characterization and analysis of particulate compounds in multiple workplace atmospheres                                       | P. Van Espen (UA)      | D.A. Sánchez   | Universidad Central "Marta Abreu" de las Villas | 99.315           |
| RIP          | 2015-2018 | Digestive and pre-digestive microbial strategies to optimize utilization of feed with high amounts of anti-nutritional factors | V. Fievez (UG)         | R.L. Orozco    | Universidad Central "Marta Abreu" de las Villas | 99.979           |
| RIP          | 2016-2020 | Genome editing for crop improvement in Musa spp.                                                                               | G. Angenon (VUB)       | B.C. Pérez     | Universidad Central "Marta Abreu" de las Villas | 100.000          |
| Crosscutting | 2005-2007 | Close the Gap 2005 with Universidad Central "Marta Abreu" de las Villas                                                        | n/a                    | L.H. Santana   | Universidad Central "Marta Abreu" de las Villas | 39.939           |
| Crosscutting | 2006-2008 | Close the Gap 2006 with Universidad Central "Marta Abreu" de las Villas                                                        | n/a                    | A. Rubio       | Universidad Central "Marta Abreu" de las Villas | 43.739           |
| Crosscutting | 2007-2008 | Improving ICT infrastructure in Universidad Central "Marta Abreu" de las Villas                                                | E. Van Driessche (VUB) | F. Herrera     | Universidad Central "Marta Abreu" de las Villas | 176.000          |
| Crosscutting | 2007-2009 | Close the Gap 2007 with Universidad Central "Marta Abreu" de las Villas                                                        | n/a                    | L.H. Santana   | Universidad Central "Marta Abreu" de las Villas | 58.028           |
| Crosscutting | 2009-2010 | ICT in Education                                                                                                               | G. Eisendrath (VUB)    | R.V. Rodríguez | Universidad Central "Marta Abreu" de las Villas | 30.705           |
| Crosscutting | 2009-2010 | Close the Gap 2009 with Universidad Central "Marta Abreu" de las Villas                                                        | n/a                    | L.H. Santana   | Universidad Central "Marta Abreu" de las Villas | 38.920           |
| Crosscutting | 2010-2011 | Close the Gap 2010 with Universidad Central "Marta Abreu" de las Villas                                                        | n/a                    | L.H. Santana   | Universidad Central "Marta Abreu" de las Villas | 34.851           |
| Crosscutting | 2012-2012 | ICT Nationwide Network                                                                                                         | G. Eisendrath (VUB)    | R.V. Rodríguez | Universidad Central "Marta Abreu" de las Villas | 23.632           |
| Crosscutting | 2012-2013 | ICT Datacenter                                                                                                                 | R. Gevaert (UG)        | n/a            | n/a                                             | 17.428           |

| List of projects 2003-2019 |           |                                                                                                                                               |                        |                                    |                                                                                                                                     |                  |
|----------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Type                       | Runtime   | Title                                                                                                                                         | Flemish promoter       | Local promoter                     | Local institution                                                                                                                   | Total budget (€) |
| Crosscutting               | 2012-2014 | Close the Gap 2012 with Universidad Central "Marta Abreu" de las Villas                                                                       | n/a                    | R.V. Rodríguez                     | Universidad Central "Marta Abreu" de las Villas                                                                                     | 36.377           |
| Crosscutting               | 2014-2015 | Close the Gap ICT Outreach project with Universidad de Oriente                                                                                | n/a                    | R.A.R. Valladares                  | Universidad de Oriente                                                                                                              | 35.575           |
| Crosscutting               | 2014-2016 | Close the Gap ICT Outreach project with Universidad Central "Marta Abreu" de las Villas                                                       | n/a                    | L.H. Santana                       | Universidad Central "Marta Abreu" de las Villas                                                                                     | 32.810           |
| Crosscutting               | 2011-2013 | ICT in Universidad Central "Marta Abreu" de las Villas                                                                                        | R. Gevaert (UG)        | H.C. Enriquez                      | Universidad Central "Marta Abreu" de las Villas                                                                                     | 37.647           |
| Crosscutting               | 2014-2015 | Statistical research planning in action                                                                                                       | E. Schrevens (KUL)     | L.H. Santana                       | Universidad Central "Marta Abreu" de las Villas                                                                                     | 19.643           |
| Crosscutting               | 2014-2015 | Improvement in the understanding and teaching of livestock environment interaction                                                            | J. Elen (KUL)          | L. Gomez                           | Universidad de Oriente                                                                                                              | 37.070           |
| Crosscutting               | 2015-2016 | Latin-American axe on preventive conservation of built heritage                                                                               | K. Van Balen (KUL)     | M.T.M. Castillo                    | Universidad de Oriente                                                                                                              | 37.500           |
| Crosscutting               | 2015-2016 | Agro-ecosystems mapping by low cost photogrammetry, based on Unmanned Aerial Vehicles (UAV): towards optimal implementation and data analysis | E. Schrevens (KUL)     | L.H. Santana                       | Universidad Central "Marta Abreu" de las Villas                                                                                     | 18.750           |
| Crosscutting               | 2015-2016 | Developing a common quality control methodology and criteria evaluating the toxicological risk in traditionally used medicinal plants         | Y. Vander Heyden (VUB) | M.E.J. Rodríguez<br>R.D. Hernández | Universidad Central "Marta Abreu" de las Villas<br>Research and Development Center for Pharmaceutical Drug Research and Development | 37.499           |
| Crosscutting               | 2016-2016 | Nationwide dissemination of research tools and education environments for use in Higher Education                                             | G. Eisendrath (VUB)    | H. C. Enriquez                     | Universidad Central "Marta Abreu" de las Villas                                                                                     | 44.506           |

Abbreviations (type): IUC=Institutional University Cooperation; SI=South Initiatives; RIP=Research Initiatives Programme; VLADOC=Flemish doctoral scholarships.

Abbreviations (Flemish institutions): KUL= KU Leuven; UG=Ghent University; UA=University of Antwerp; UH=University of Hasselt; VUB=Vrije Universiteit Brussel; HZS=Antwerp Maritime Academy; AP=Artesis Plantijn University College.