

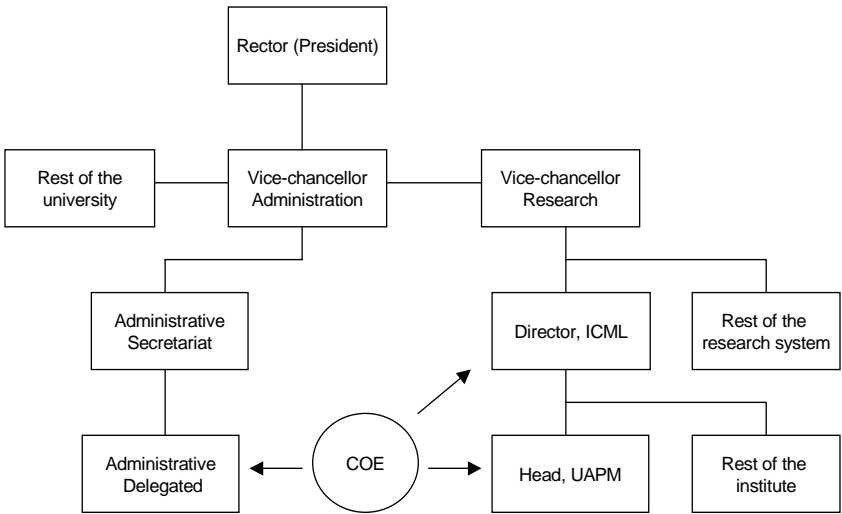


## Unidad Académica Puerto Morelos, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México, México

<b>Institutional setting</b>	
1. Name and affiliation	UNAM's Academic Unit in Puerto Morelos (known as UAMP) belongs to the Institute of Marine Sciences and Limnology (ICML) of the National Autonomous University of Mexico (UNAM)
2. Contact details	<p><b>Address:</b> Unidad Académica Puerto Morelos (UAPM), Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México Apartado Postal 1152, Cancún 77500, QR, México</p> <p>Phone +52 (998) 871 02 19 ext. 21/22 Fax +52 (998) 871 01 38 <b>Website:</b> <a href="http://www.icmyl.unam.mx/eng/index.html">http://www.icmyl.unam.mx/eng/index.html</a></p> <p><b>Principle contacts:</b> Dr. Adolfo Gracia Gasca ICML, Director, email: <a href="mailto:gracia@icmyl.unam.mx">gracia@icmyl.unam.mx</a> Brigitta van Tussenbroek, Head, UAMP: email: <a href="mailto:jefepm@icmyl.unam.mx">jefepm@icmyl.unam.mx</a> COE Rep: Dr. Roberto Iglesias-Prieto, email: <a href="mailto:iglesias@icmyl.unam.mx">iglesias@icmyl.unam.mx</a></p> <p>TR COE associate: Centro Ecológico Akumal, Apartado Postal 2, Akumal, Quintana Roo, Mexico 77760, Email: <a href="mailto:info@ceakumal.org">info@ceakumal.org</a>.</p>
3. Location	UAPM is located on the east coast of Yucatan Peninsula, 20 km south of Cancun International airport, Longitude/latitude: 20° 52' N, 89° 52'W
4. Mandate	<p>UAPM serve as UNAM's academic on marine research in Puerto Morelos. Located along the east coast of the state of Quintana Roo, this small fishing village is enclosed and protected by a typical Caribbean reef system composed of coral, seagrass and mangrove eco-sedimentary systems.</p> <p>A mission of the lab is to investigate various parts of this reef system, including the function of its diverse plant and animal communities, their interrelations, the physical structure they collectively produce, and the coastal and oceanic environments they influence and protect.</p> <p>The study scale of these different components varies enormously in both space and time, from split-second molecular processes controlling the cells of its inhabitants, to ecosystem level processes to understand how the ecosystem has developed over thousands of years.</p>
5. Regional map	<p>Figure 1: Yucatan Peninsula, southwestern Caribbean</p> 

<p>6. Local area description</p>	<p>Site description (from paper): UAPM is located at 2.5 km of Puerto Morelos, a little village situated 30 km south of Cancun, in the proximity of a reef lagoon. The Puerto Morelos reef lagoon is delimited by a fringing reef located between 550m and 1.5 km from the coastline. The lagoon is relatively shallow with a depth average of 3m, being 4.5m the deepest depth. Mean surface water temperature is 28.5 °C, with an averaged minimum in January of 26.6 °C, and an averaged maximum in August of 31 °C. The reef lagoon substratum consists of coarse carbonate sediments, colonized by submarine prairies dominated by the seagrasses species <i>Thalassia testudinum</i> and <i>Syringodium filiforme</i>.</p>
<p>7. Local area map</p>	<p>Figure 2: Aerial view of Puerto Morelos coral reef and seagrass system. White markers indicates GEF TR pilot survey sites for ecological monitoring</p> 
<p>8. Institutional setting (within University)</p>	<p>The COE representative reports on administrative matters to the Administrative Delegate, who reports to the Administrative Secretariat of the Institute of Marine Sciences and Limnology (ICML). The Administrative Secretariat reports to the central administration office. GEF TR operational activities will be coordinated with the Head of the laboratory (UAPM) and the director of ICML.</p> 

<p>9. Management, reporting and auditing structure</p>	<p>The ICML has its own administrative department in charge of managing finances under the responsibility of the Director. The University has a central administrative unit, under the control of the Administrative vice-chancellor, the regents of the university and an independent internal auditing office. In addition, an external auditing service is contracted every year for the whole University. The finance management in the University is strictly done according to the University Legislation, which complies with common international procedures in order to assure the correct and transparent financial administration.</p> <p>The director of the ICML, with the approval of the Vice-chancellor of Science, is responsible for celebrating research and service agreements with other Institutions.</p> <div style="text-align: center;"> <pre> graph TD     A[Director, ICML] --- B[Head, UAPM]     B --- C[Administrative Delegated]     B --- D[Faculty]     B --- E[Technical coordinator]             </pre> </div>																										
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<p>10. Faculty staff</p>	<p><b>Institute of Marine Sciences and Limnology (ICML)</b> ICML academic staff: more than 60 investigators and a similar quantity of academic technicians that are associated to an investigator or to specific academic services.</p> <p><b>ICML faculty staff, Academic Unit in Puerto Morelos:</b></p> <table border="0"> <thead> <tr> <th style="text-align: left;"><b>Name</b></th> <th style="text-align: left;"><b>Field of expertise</b></th> </tr> </thead> <tbody> <tr> <td>Dr. José Alvarez Cadena</td> <td>Zooplankton ecology</td> </tr> <tr> <td>Dra. Susana Enríquez</td> <td>Photosynthesis regulation, ecophysiology</td> </tr> <tr> <td>Dra. Judith Sánchez Rodríguez</td> <td>Marine toxicology</td> </tr> <tr> <td>Dra. Ania Banaszak</td> <td>Photobiology, UV photodamage. Symbiosis</td> </tr> <tr> <td>Dr. Roberto Iglesias Prieto</td> <td>Photosynthesis, ecophysiology . Symbiosis.</td> </tr> <tr> <td>Dra. Lourdes Segura Puertas</td> <td>Zooplankton taxonomy, toxicology</td> </tr> <tr> <td>Dr. Paul Blanchon</td> <td>Paleoecology, structures, evolution of reefs</td> </tr> <tr> <td>Dr. Eric Jordán Dahlgren</td> <td>Coral ecology, coral diseases</td> </tr> <tr> <td>Dra. Patricia Thomé Ortiz</td> <td>Osmoregulation</td> </tr> <tr> <td>Dra. Patricia Briones Fourzán</td> <td>Crustacean: Ecology and Behavior</td> </tr> <tr> <td>Dr. Enrique Lozano Álvarez</td> <td>Crustacean: Ecology and Behavior</td> </tr> <tr> <td>Dra. Brigitta van Tussenbroek</td> <td>Seagrass ecology.</td> </tr> </tbody> </table>	<b>Name</b>	<b>Field of expertise</b>	Dr. José Alvarez Cadena	Zooplankton ecology	Dra. Susana Enríquez	Photosynthesis regulation, ecophysiology	Dra. Judith Sánchez Rodríguez	Marine toxicology	Dra. Ania Banaszak	Photobiology, UV photodamage. Symbiosis	Dr. Roberto Iglesias Prieto	Photosynthesis, ecophysiology . Symbiosis.	Dra. Lourdes Segura Puertas	Zooplankton taxonomy, toxicology	Dr. Paul Blanchon	Paleoecology, structures, evolution of reefs	Dr. Eric Jordán Dahlgren	Coral ecology, coral diseases	Dra. Patricia Thomé Ortiz	Osmoregulation	Dra. Patricia Briones Fourzán	Crustacean: Ecology and Behavior	Dr. Enrique Lozano Álvarez	Crustacean: Ecology and Behavior	Dra. Brigitta van Tussenbroek	Seagrass ecology.
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12. Ongoing research projects	<p><b>Dr. Roberto Iglesias-Prieto:</b> 1- Effect of Temperature on the photophysiology of symbiotic dinoflagellates and its role in coral bleaching. 2- The role of the physiological diversity of the symbiotic dinoflagellates in the carbon isotopic record of coral skeleton. 3- Effects of Localized Anthropogenic Stress and Compounding Impacts of Climate Change on the Sustainability of Coral Reef Ecosystems and the Implications for Management. 4- Solar radiation, coral bleaching and climate.</p> <p><b>Dr. Susana Enríquez:</b> 1- Optical properties of intact corals and its effect on coral bleaching. 2- Plasticity in the <i>Thalassia testudinum</i> morphological response to the environment. Integration: morphology, physiology and growth. 3- Evaluation of carbon limitation on the photosynthetic activity of a diverse group of reef primary producers. 4- Ecology of the association <i>Haliclona caerulea</i> - <i>Jania adherens</i> in Mazatlan Bay (Mexican Pacific Ocean). Comparison of the optical properties and the photosynthetic performance of <i>J. adherens</i> in the isolated and the associated forms.</p> <p><b>Dr. Anastazia T. Banaszak:</b> 1- UV radiation effects on reef ecosystems. 2- Study of the association between <i>Strombus gigas</i> and the <i>Symbiodinium</i> type dinoflagellates.</p> <p><b>Dr. Paul Blanchon:</b> 1- Holocene coral reef systems in the Mexican Caribbean and Campeche area. Architecture and development. 2- Pleistocene coral reef systems in the Yucantan Peninsula. 3- Climatological significance of the Holocene reefs in the Caribbean-Atlantic province.</p> <p><b>Dr. Eric Jordán Dahlgren:</b> 1- Cyclon effects on coral communities. 2- Coral communities in the Gulf of Mexico. 3- Relative importance of coral diseases in the coral communities of the NE Mexican Caribbean. 4- CARICOMP (Caribbean Coastal Marine Productivity).</p> <p><b>Dr. B. van Tussenbroek:</b> 1- Seagrass Biology and Ecology in the P. Morelos reef lagoon. 2- CARICOMP (Caribbean Coastal Marine Productivity).</p> <p><b>Dr. Enrique Lozano Alvarez:</b> 1- Behavioral interactions between the lobster, <i>Panulirus argus</i>, and its predators. 2- Growth of the first benthonic stages of <i>Panulirus argus</i> under experimental semicontrolled conditions.</p>																																																									

<p>13. Ongoing research projects</p>	<p><b>Dr. Patricia Briones Fourzán:</b> 1- Importance of chemical signals in the aggregation and refuge selection of two sympatric lobsters <i>Panulirus guttatus</i> and <i>P. argus</i>. 2- Effects of the use of artificial refuges on the lobster population in the P. Morelos reef lagoon. 3- Post-larval recruitment of the lobster <i>Panulirus argus</i> in the Mexican Caribbean. 4- Macrocrustacea in the Mexican Caribbean.</p> <p><b>Dr. Patricia Thomé:</b> 1- Osmoregulation in the marine yeast <i>Debaryomyces hansenii</i>. 2- Isolation of osmoregulated genes in the marine yeast <i>Debaryomyces hansenii</i>.</p> <p><b>Dr. Lourdes Segura:</b> 1- Systematic study of the planktonic Cnidaria (Meduseae) in the Mexican Caribbean.</p> <p><b>Dr. Judith Sánchez Rodríguez:</b> 1- Isolation and characterization of the biological activity of the <i>Styrodactyla helianthus</i> toxins. 2- Isolation and characterization of the toxins of Cnidaria (Anthozoa, Spherozoa, Cubozoa) in the Mexican Caribbean.</p> <p><b>Dr. José Álvarez Cadena:</b> 1- Study of the coastal lagoon system in Quintana Roo (Mexico). 2- Endoparasitism in planktonic organisms.</p>
<p>14. Education, course curricula</p>	<p>UAPM/ICML teach a range of master and doctorate courses providing an interdisciplinary approach to ocean processes and aquatic systems in general. Disciplines include:</p> <ul style="list-style-type: none"> <li>• Physical Oceanography</li> <li>• Chemical Oceanography</li> <li>• Marine Geology</li> <li>• Methods of Oceanographic Research</li> <li>• Limnology</li> <li>• Aquatic Ecology</li> <li>• Marine Biology</li> <li>• Photobiology: Light and Photosynthesis in the Ocean</li> </ul> <p>Further details on courses at: <a href="http://www.icmyl.unam.mx/eng/index.html">http://www.icmyl.unam.mx/eng/index.html</a></p>
<b>Regional collaboration</b>	
<p>15. Local / regional partners, linkages to NGOs, government agencies</p>	<p>The UAPM maintains close ties with national and local organizations including government agencies in charge of fisheries, the environment, science and technology.</p> <p>Each group of researchers establishes its own relationships. Some of the current ones are: Cancun medical attention, amusement park Xcaret, Fishery agency in Puerto Morelos.</p> <p>Activities: Study of allergic reactions to jellyfish toxins (medical attention in Cancun); access to aquarium facilities, fossil reef systems and environmental education department (Xcaret), collaboration in a project about symbiosis in <i>Strombus gigas</i> with dinoflagellates (Fishery agency).</p>
<p>16. Regional research partners, networks</p>	<p>UAPM maintains research partnerships with numerous institutions in Mexico and abroad. Main research partners include:</p> <ul style="list-style-type: none"> <li>• Department of oceanography and Dept of applied physics in CICESE (Ensenada, BC, Mexico)</li> <li>• Science Faculty in UNAM</li> <li>• Member of the CARICOMP network (UAPM contact: Francisco Ruiz-Renteria), (<a href="http://www.cdc.org.jm/caricomp.html">http://www.cdc.org.jm/caricomp.html</a>)</li> <li>• Member of Association of Marine Laboratories of the Caribbean ()</li> </ul>

17. Collaboration with international research institutions or scientist	Individual faculty members in the UAPM maintain active collaborations with individual scientist working on foreign institutions: <ul style="list-style-type: none"> <li>• IMEDEA (CSIC, Spain)</li> </ul>
18. Linking science to management and policy advise	Although UAPM does not participate actively in regional management projects, such as the Mesoamerican Coral Reef Initiative, the UAPM is an important partner in the management of the local Marine Protected Area. In addition, individual faculty members are members of several technical committees in charge of managing other coral reef related MPA's
19. Linkages to local or regional NGOs, management activities, projects with potential relevance to GEF TR	UAPM are collaboration with partners in national and regional projects and NGO's such as: <ul style="list-style-type: none"> <li>• GEF Mesoamerican Barrier Reef Project (Web: <a href="http://www.mbrs.org">www.mbrs.org</a>)</li> <li>• Centro Ecológico Akumal - Apartado Postal 2, Akumal, Quintana Roo, Mexico 77760 Phone: 011-52-984-875-9095 Fax: 011-52-984-875-9091 Email: <a href="mailto:info@ceakumal.org">info@ceakumal.org</a>, Web: <a href="http://www.ceakumal.org">www.ceakumal.org</a></li> </ul>
20. Linkages to GEF TR working groups	Two faculty members are members of the GEF TR working groups on Coral Bleaching and Diseases, respectively, and will be actively involved in project development. In addition, other members of the faculty will be associated with the GEF TR project.
21. Outreach strategy	Pending
22. Linking TR findings to regional managers and governmental official	Pending
<b>Laboratory logistics</b>	
23. Research facilities, including main equipment and facilities, list key facilities and equipment available (for lab and field work) - and highlight what is needed from GEF project:	<p>a) Laboratories: Six fully equipped laboratories to conduct research ranging from molecular biology to geology. Extensive facilities for molecular research, as well as small-scale mesocosm tank-system</p> <p>In addition, a 100 m<sup>2</sup> shared lab for visiting scientists.</p> <p>The activities of the Bleaching and Diseases Working Groups will be conducted in the labs of the participating faculty members.</p> <p>b) Field facilities: a range of equipment for fieldwork and ecological research are available.</p> <p>c) Underwater photo equipment: In general, all lab equipment belongs to individual scientists and projects and in some cases will be available for the use by the guest scientists. Need to acquire equipment as listed in WB proposal (equipment costs).</p> <p>d) Boating - as above</p> <p>e) Dive gear - as above</p> <p>Specific equipment needs for TR: (See Bleaching WG workplan)</p>
24. Training and seminar facilities	UAPM has a seminar room with space for 20 people and a conference room for up to 80 people.
25. Accommodation	Two modern housing facilities with room for 35 guests total

26. Routine environmental data being logged at field station?	Light, Temp <i>Incomplete list</i>
27. Historical data and other background information on site	Yes <i>Detailed list pending</i>
28. Publications/literature reporting COE research	Yes <i>Detailed list pending</i>
29. Internet facilities	Low-speed internet available
30. Video-conferencing facilities:	In development
31. Catering arrangements	Yes