

## SWOT ANALYSIS SCIENTIFIC ADVISORY BOARD 2016-2017

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### Research Products

Strengths	Weaknesses
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>High quality research, as witnessed by the increase, over previous year, in mean Impact Factor of 2017 research products from all research groups.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>Gross scientific production is quite good.</li> <li>Average impact of scientific publications is high and increasing from 2016 to 2017, indicating an improvement in the quality of the research production.</li> <li>The overall average ratio of publications/researchers-year is above 3, which is good. The amount of publications arising from international collaborations is relatively high (about40%).</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>Very good publication output</li> <li>Mean IF (and SJR) increased from 2016 to 2017 in all groups</li> </ul> <p>Two very high IF publications in 16/17, the highest in collaboration with other Padova departments but also with international cooperation.</p> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>Very good number of publications</li> <li>Several high impact publications</li> <li>All areas publishing</li> <li>Year-on-year increase in IF and SJR indices</li> <li>&gt;70% first/last author on publication being from the Department.</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>Percentage of research articles with first/last/corresponding author belonging to the Department.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>A number of professors (10%) did not publish any research article and this did not change from 2016 to 2017, suggesting a low research activity for a significant number professors.</li> <li>About 70% of the researchers have a moderate-to-low publication rate (less than 5 publications/year). Less than half of the scientific publications are led by researchers belonging to the department. This makes the research quite dependent of external collaborations, which are difficult to maintain.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>Total publication output decreased from 2016 to 2017 due to marked output decrease from the PTDD and BPBRM groups (which are also the smallest groups). For PTDD did not rebound in noticeable IF increased</li> <li>International collaborative articles slightly decreased</li> <li>The majority of the manuscripts are written with national collaborators.</li> <li>Five professors didn't publish any article in 2016. The same happened in 2017</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>Some staff not publishing</li> <li>~40% papers involving international collaborations</li> </ul>

Opportunities	Threats
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Include number of patent applications when reporting research products to highlight the consideration/interest in potential exploitation of results.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There is a considerable level of international collaboration in the research carried out by the department that could be increased to enlarge scientific production and quality.</li> <li>• However, at the same time, projects led internally need to be strengthened.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Aim to publish in higher IF journals</li> <li>• Attract international cooperations to increase publication quality and impact</li> <li>• Expanding size of PTDD and BPBRM Establish a rewarding program for groups that significantly increase IF and /or publish above a minimum IF, and/or publish a number of articles per year depending on group size.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Intra-departmental collaborative publications Possibility of reducing/increasing teaching load depending on research productivity and PhD supervision</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Professors that do not publish research articles.</li> <li>• Significant decrease in research articles from two groups: part of normal variability over previous years or trend?</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There is a considerable decrease in article production from 2016 to 2017. If this is a part of a longer-term tendency, measures need to be taken to stimulate research.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Penalty in the Evaluation Research by the IME, may lead to an effort in speeding and increasing quantity, risking efforts in higher IF publications</li> <li>• Low IF may impair attracting international funding.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Significant drop in publications from the Biochemistry, Pharmaceutical Biology and Regenerative Medicine Group</li> </ul>

## Internationalisation

Strengths	Weaknesses
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Erasmus agreements: increase in number of agreements to widen the choice for students.</li> <li>• Proactivity in the organization of seminars.</li> <li>• Researchers selected for Inter-University Cooperation.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There is a reasonable and constant number of international workshops organized every year by the department.</li> <li>• The number of internationalization activities (Erasmus agreements, visitors, seminars of invited researchers, etc.) is high and increasing from 2016 to 2017</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Efforts in organizing International Workshops</li> <li>• High number of Erasmus students and visiting scientists which increased from 16/17</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Workshops focused on the same topic (cancer) despite many research areas in the Department.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• The Department has not organized recently any important congress in their research field that could provide a higher visibility to their research.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• The majority of Workshops were organised by the same researchers</li> </ul>

<p>3 outgoing scientists in 2017 (due intellectual enrichment and collaborative work).</p> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Good Erasmus links</li> <li>• Year-on-year increase in foreign speakers</li> <li>• Broad spectrum of international workshops</li> </ul>	<ul style="list-style-type: none"> <li>• How international the workshops are? (speakers/participants out of Italy).</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Few visiting professors/scientists</li> <li>• Still relatively few foreign speakers</li> <li>• Still relatively few workshops and international conferences</li> </ul>
Opportunities	Threats
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• The number of different research areas offers opportunity for more workshops/events.</li> <li>• Highlighting number of PhD students spending time abroad, as part of their doctoral course, would provide a better picture of the Department's internationalization.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• International activities need to be continuously stimulated.</li> <li>• Participation of the Department members in different international societies may offer opportunities to bring important congresses or conferences to Padova</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Invest efforts in Workshop organisation by different groups</li> <li>• Invite scientists/advertise the Workshops broadly</li> <li>• Involvement in international teaching programs (e.g FEBS- EMBO- funded workshops and courses)</li> </ul> <p>Increasing short-term stays of young researchers at other Universities/ laboratories.</p> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Broad spectrum of research activities promoting international collaborations</li> <li>• Strong research credentials should attract scientific visitors</li> <li>• Sabbatical programme for foreign collaboration.</li> <li>• Use of expertise to develop links with emerging economies from the leadership position</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Failure in maintaining a flow of at least a few researchers spending time abroad as part of collaborations or as visiting scientists.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Low visibility by other laboratories ready to collaborate if there would be initial contact with the department (e.g. short stays abroad).</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Loss of income due to decreasing international interactions and lost grant opportunities</li> <li>• Lost high-impact publication opportunities</li> <li>• Staff career development affected by fewer international experiences</li> </ul>

## Fund Raising

Strengths	Weaknesses
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Department's researchers recipient of prestigious grants, e.g. EU Marie Curie fellowship, AIRC Consolidator Grant</li> <li>• Research contracts with companies</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There seems to be a constant seek for EU grants, at least by some active professors. The percent of funding from EU programs is relatively high (about 50%).</li> <li>• There is a quite important number of contracts with external companies, involving a considerable amount of funds, which has increased from 2016 to 2017.</li> <li>• The level of funding donations is good.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Total fund raising has increased 16/17</li> <li>• Able to attract EU or international funding (i.e. 2 EU Projects in 2016, 1 Marie Curie in 2017, 7 ESFP in 2016)</li> <li>• Additional funding sources like existing contracts with companies (which increased from 2016/2017) and donations.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Good level of research funding</li> <li>• Good number of academics applying for funding</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Percentage of professors having competitive grants (although increased from previous year).</li> <li>• Research fellowships: decrease vs. previous year</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• The total yearly research budget is relatively low for the size of the Department and the amount of researchers and professors.</li> <li>• There is a relatively important dependency (about 25%) from the funds assigned by their own university, particularly for some researchers.</li> <li>• The percentage of professors benefiting from competitive grants is quite low (only about 30%).</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Great part of funding is either from Padova University or from National sources</li> <li>• Roughly, only one third of professors benefited from competitive grant raising.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Relatively high ratio of internal to external funding</li> <li>• Pockets of income generation</li> <li>• Innovation income relatively low</li> <li>• Relatively few international grants</li> </ul>
Opportunities	Threats
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Funds from companies and donations: an opportunity to i) buy new instruments/properly maintain the existing ones, and ii) increase research fellowships to young and talented researchers.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• Despite the relatively scarce research funding, the researchers have adapted to make the most out of it, with a good level of scientific production. This resilience offers a good opportunity to boost scientific excellence if funding level becomes improved.</li> <li>• The quality of projects and ideas for future research is very high. This should stimulate an increase in applications for more funding (EU grants, national plans, new collaborations, ...).</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Allocating funds in such a way not rewarding (enough) the scientifically productive groups.</li> <li>• Not proper maintenance or update of instruments (considering the high income from contracts with companies)</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There is the risks that seeking for external funding (competitive grants from EU, National programs, etc.) is beared by only a small number of active researchers, while other researchers become too dependent of internal funds.</li> <li>• Raising funding to hire and maintain young researchers is critical for research production. Strong efforts must be made to increase the amount of young researchers.</li> </ul>

<p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• New funding sources in particular for groups that lack it: EU or international programs (e.g Wellcome Trust; EKFS; HFSP).</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Interdisciplinary grant applications exploiting broad internal expertise</li> <li>• Income generation from innovation</li> <li>• Equipment/expertise for hire to external bodies</li> <li>• Innovation income (companies) on the increase year-on-year</li> </ul>	<p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Important part of budget depending on steady funding by the Padova University which may be at risk depending e.g on evaluation results and performance of other departments.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Significant loss of income if successful individual leaves</li> <li>• Internal funding dependent on university policies that can change rapidly</li> </ul>
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### Third Mission

Strengths	Weaknesses
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Balanced activities and initiatives</li> <li>• Spin-offs</li> <li>• Web site with useful information on instruments for companies looking for specific services.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• Public engagement of the Department's personnel seems appropriate.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Meeting the activity areas:</li> <li>• Sufficient social engagement (Scientific parks) and knowledge dissemination events</li> <li>• Involved in technology transfer and innovation with 2 Spin-offs</li> <li>• Involved in continuing education (courses for pharmacists etc).</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Relatively diverse engagement spectrum.</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Website of Ananas nanotech appears not to be regularly updated.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• No detailed information about research transfer (patents, licenses).</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Few spin-off companies</li> <li>• Low level engagement in national and EU/international bodies (perhaps not presented in the document?).</li> </ul>
Opportunities	Threats
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Providing a brief overview of competences and activities for each of the fields listed under the "Scientific Equipments and Technical Services" page would improve it.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• A high number of contracts with external companies can result in important transfer of research benefits to society</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Properly balance efforts on first and second vs. third mission, in order not to negatively impact on the first two missions.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul>

<p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Increased public engagement (open events, talks, displays)</li> <li>• More school visits</li> <li>• Open days for public, prospective students and parents</li> <li>• Website aimed at lay audiences</li> </ul>	<p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Meets the University's third mission?</li> <li>• TM performance metrics improve Padova University ranking?</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Lack of visibility causing lack of appreciation of departmental achievements</li> <li>• Loss of interactions with companies due to non-engagement leading to loss of funding</li> <li>• Problems with student and staff recruitment</li> </ul> <p>Loss of income</p>
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## General or specific comments

Strengths	Weaknesses
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Department has complementary research areas allowing translational research to be conducted.</li> <li>• Number of PhD students.</li> <li>• Scientific instrumentation.</li> <li>• Sharing of results and objectives of the Department through the web site</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• The department has a powerful mixture of well-experienced researcher and highly bright and promising young scientist that offers a good potential to grow scientific production.</li> <li>• The level and quality of equipment and infrastructure seems appropriate</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Very good publication output</li> <li>• Groups with very diverse thematic interests open opportunities for interaction within the department. Qualified and complementary know-how.</li> <li>• Good infrastructure and very good equipment.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Very diverse in-house expertise</li> <li>• 50:50 ratio of staff to PhD students</li> <li>• Good laboratory base</li> <li>• Relatively equal teaching load</li> <li>• Good alignment of teaching and research.</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• Spread of laboratories and infrastructure in several separate buildings makes difficult department cohesion and optimal use of facilities.</li> <li>• There seems of be a problem of space for some reserachers and some of the infrastructure looks a bit outdated</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Widely depending on University/ national funding.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• No clear critical mass area</li> <li>• No clear focus in departmental research</li> <li>• Location in 3 buildings might affect inter-departmental interactions</li> </ul>

Opportunities	Threats
<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Value findings with potential translational relevance or commercial exploitation by filing patent applications.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• The potential of some bright young researchers of the department is very high. These reserachers must be strongly supported in order to ensure scientific excellence and proper future renewal of leadership in the department.</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• Increase international partnering</li> <li>• Lighten teaching activities of junior researchers.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Pursuit of multi-diciplinary projects uisng in house expertise</li> <li>• Equipement/experise could be offered to external parties to generate income</li> <li>• Enhancement of research-led teaching</li> </ul>	<p><b>Reviewer n. 1</b></p> <ul style="list-style-type: none"> <li>• Potential issues in appropriate maintenance of instruments that guarantee research activities are conducted using up-to-date technologies.</li> </ul> <p><b>Reviewer n. 2</b></p> <ul style="list-style-type: none"> <li>• There is the danger that a continued lack of funding for some researchers push them to abandon research activity. Measures should be taken to stimulate and support them to maintain activity or incorporate them to larger and more financed groups</li> </ul> <p><b>Reviewer n. 3</b></p> <ul style="list-style-type: none"> <li>• More than 120 h/y teaching for Assitant/Associate Professors may negatively impact research and time invested in fund raising.</li> </ul> <p><b>Reviewer n. 4</b></p> <ul style="list-style-type: none"> <li>• Loss of focus – too big diversity in research</li> <li>• Expenisve but rarely used equipment maintenance could drain resources.</li> </ul>