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BASTION

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Report

Report from the outcomes of report presentation to authorities

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All reports are available on BASTION Webpage:
<http://bastion.wum.edu.pl/en/raporty/>



The material presented in this report is based on two project evaluations that lasted two days during the following dates: first visitation: 29-30/01/2015, second visitation 16-17/12/2015; as well as presentations which were delivered by the BASTION team and the administrators of MUW on the 22nd of February, 2016. The evaluators have also extensively worked on the reports outside MUW and carried out e-mail correspondence with prof. Jakub Golab (project coordinator) and Mrs. Iwona Drozdowska-Rusinowicz (project manager) asking for additional written information on the BASTION activities.

1. Introduction

Each project evaluation lasted 2 days. Before the first evaluation, the committee was presented with written materials prepared by the BASTION team that included Annexes IA and B (description of the project) and the 1st period report. However, the mentioned materials contained activities accomplished between 01/09/2012 and 28/02/2014 only, and therefore, did not include most of what was accomplished till 29/01/2015. Thus, the review committee was informed of these additional developments at the review date verbally, and also via additional documents provided at a later date, which together formed the basis of the first report delivered by the review committee to the BASTION team.

The first project evaluation consisted of oral presentations summarizing the state of the art of the Medical University of Warsaw (MUW) and projects undergoing within the University, as well as detailed sessions on the progress within each work package (WP) included in BASTION. The second day included site visitations and the inspection of the new infrastructure, as well as talks given by the newly recruited BASTION scientists summarizing the scientific work performed under the BASTION umbrella.

During the second review, the BASTION team leaders gave talks and presented the committee with additional written documents which included the 2nd period report, a policy paper and documents describing deliverables corresponding to the second period reportable; thus concluding all work related to this project.

The first day consisted of an overview of the previous report and related recommendations followed by talks summarizing developments and deliverables presented at the conclusion of each work package (WP). The second day of the evaluation was dedicated to discussions and report generation by the review committee.

As detailed below, the committee agreed that the WPs were successfully completed as declared. Further recommendations are summarized at the end of this document.

2. State of the art and REGPOT contributions to the potential of this institution.

Based on the documents provided to the report committee, it was evident that the MUW employed on average 1278 (1123 to 1398) researcher scientists during 2011 to 2014, spread among the divisions of the “1st medical”, “2nd medical”, pharmacy and public



health divisions. BASTION made possible the employment of 23 researcher scientists thus far. The MUW has several ambitious projects in the working, which include the CePT (center for preclinical research and technology) project, which is expected to bring in funding in the range of 100 million Euros. Another investment that has realized is the pediatric hospital which cost about 250 million Euros, and an additional CePT that is planned to focus on several themes is being prepared. As explained by the Rector for Science of MUW, the University is planning the formation of an incubator for scientific entrepreneurs and/or an “academic center for clinical studies”, which would have the support of several biotech companies. Institutes of dentistry and psychiatry, as well as one for proton therapy are in the planning. Most importantly the University has undertaken the initiative to pay for patent attorney costs for scientists willing to file patent applications protecting their intellectual property rights (IPRs). We were told that the incentive to do this was also partially due to the fact that BASTION researchers applied with several patent applications as a result of their projects.

The BASTION team declared their willingness to present to the University administration a detailed list explaining factors that hampered scientific development during this project, thus aiming to help ease similar factors that could be encountered in future projects.

However, as detailed below, 90% of scientists employed through BASTION are currently employed at MUW or another institution where (we are told) they are willingly collaborating with the MUW scientists, which to us reflects their appreciation of the quality of the “post-BASTION” MUW.

Throughout the project the BASTION team authored or co-authored over 200 publications and 4 book chapters. 48 of these were authored by post-doctoral fellows employed through the project. Publication numbers compared to the 2009-11 period increased about 65% during the BASTION project for team members.

During the BASTION project, the team members submitted over 70 grant applications to multiple national and international funding agencies and organizations. Of these 51 were successful, demonstrating the scientific strength of the researchers developing their skills under the BASTION project. One of the most important projects to be continued in years 2016-2018 is an E.C. sponsored H2020 “STREAM” (Strategies towards Excellence in Immuno-Oncology) Twinning grant to the MUW that will be coordinated by Prof. Jakub Golab. Both the experience and know-how from BASTION is expected to be transferred to STREAM, which aims to establish an international, long-term, strategic partnership between MUW and its partnering institutions (University of Oxford, The Francis Crick Institute, Oslo Universitetssykehus and International Centre for Genetic Engineering and Biotechnology).

The evaluators underscored that the BASTION scientists have been able to utilize the support towards both obtaining grants as well as publications, and have been able to motivate the University administration in the correct direction.



3. WP contents and Recommendations

3.1 WP1 (Twinning through secondments)

This WP was planned to last during the first 36 months of the project. At the date of the first visitation, 42% of all the visits were completed (as calculated on the basis of person/months). Although these interactions resulted in a number of publications, (i.e. they were productive) a difficulty in the realization of incoming visits was obvious. The BASTION team explained that primary reasons why twinning activities were not being realized was because 1. The senior scientists who were invited were reluctant to come to Poland, 2. Because the teams were not immediately able to cover for direct costs of joint research projects (e.g. consumables).

At the end of the first visit, the review committee recommended that: 1. incoming visits could be exchanged with outgoing visits; 2. visitations could be split into smaller time periods and/or the incoming researchers could organize workshops or courses as an alternative to long term stay. During the second visit, the committee was presented with the data demonstrating that the BASTION team has been successful in increasing both outgoing as well as incoming scientist numbers that reached goals set for this report period. We are also told that this WP led to the establishment of at least 7 collaborative partnerships with several European institutions.

One major result of WP1 related activities is a marked contribution of BASTION members to 13 original research papers and 3 reviews, and additional 4 manuscripts that are being in preparation.

The recommendations of the review committee were successfully incorporated into the project, and at the end over 60% of incoming and over 149% of outgoing visits were accomplished.

3.2 WP2 (Know-how and experience sharing)

Know-how and experience sharing consisted of 5 tasks that aimed at facilitating the experience sharing process of the BASTION team with scientists and non-scientists alike, and included: the organization of workshops (1); organization of an international conference (2); active participation in international research conferences (3); promotion of BASTION activities internationally (4) and raising public awareness of the benefits of translational research (5).

The committee underscored that these aims were successfully met. Among five workshops originally aimed for, all were completed before the end of 2014.

The international conference on translational oncology (TRON) was successfully held in May 2015 and two of the reporters of this project participated as invited speakers.

The reporters have also stated that participation in international meetings has been pursued successfully. In all, 34 researchers participated in 22 conferences and in at least one international conference a team member delivered a talk during this period. Altogether, 50 of 52 planned participations took place successfully over the project



period. All reports related to participations were made available over the web page of BASTION.

The MUW received a national award where BASTION was mentioned as being the primary underlying reason for the award, and the project web page received more than 15.000 hits during the whole project period.

All 5 workshops were successfully completed and most were very well attended (over 1000 participants). A policy paper geared to stakeholders, scientists, and the community in general was also produced. The paper aimed to generate a review based on the analysis of cancer prevalence, information, treatment options etc. in Poland and to present a strategy by which information that would lead to improved awareness and treatment options could be communicated to patients and individuals at risk.

Other activities included participation in the science events, organizing trainings for the journalists, cooperation with PAG's from the oncology area, cooperation with over 30 journalists (from medical and national media) resulting in over 300 publications about BASTION and other events focused in Innovation (ACES, Fulbright Association, etc.)

3.3 WP3 (Building capacity by attracting top-level scientists)

All nine experienced scientists were successfully recruited together with one group leader during the first reporting period. For the bioinformatics team, two experienced scientists and two IT specialists were also recruited.

All sixteen post-doctoral fellows employed via the BASTION project continued on with a successful integration pathway, as described in detail in the evaluators report.

The reputation that the BASTION conferred to MUW seems to have increased as indicated by the fact that researchers from both Poland and abroad are more willing to apply for the positions at the University. This is expected to be further facilitated by national funding institutions such as National Science Centre (<https://www.ncn.gov.pl>) that encourage international researchers to apply for funds allowing them to the transfer to Polish Universities. One such program, POLONEZ is a funding program addressed to incoming researchers who may apply for 12- or 24-month fellowships in host institutions in Poland. One researcher from the USA has already submitted his grant application to the National Science Centre under the guidance of prof. Jakub Golab.

Despite the success in the employment of scientists via BASTION, the committee was told of the difficulty of keeping trained personnel on board, as stable positions were difficult to come across and recruitment of technicians and students remained problematic.

3.4 WP4 (Acquisition of research equipment & Computer Cluster)

This WP has aimed the purchase of a microfluidics station, a protein purification system, a fluorescent microscope and analysis system, a high throughput DNA/RNA



sequencer, a laser micro dissection system and an IT infrastructure consisting primarily of servers with large storage capabilities.

All of these aims were completed successfully. The review committee saw all equipment during the first review visitation. Although evidence that these systems were heavily used did not exist, and publications before 2015 hardly include data generated via this equipment, almost all the new grant applications from the group included experiments that would depend on the use of at least one of this equipment. The infrastructure, thus, is clearly able to propel scientific vision and thinking forwards.

The reviewers emphasized the utility of some equipment like the pipetting station, the DNA isolator and the NGS machine should be thoroughly thought over to maximize the needs. One means for their more frequent use could be through national and international collaborative efforts that can be expected to follow this project, or via the shared usage of these by companies that actively collaborate with the university.

The review committee appreciated the new infrastructure and competence of the IT team. However, given the new personnel and infrastructure (and considering that there are about 4 NGS machines in MUW now) the committee suggested that these be used more effectively and possibly as a means of providing bioinformatics services to Europe and beyond. Equipment capabilities of the team could also appear in the projects web page.

Another major issue the committee was told about was the difficulty in obtaining service contracts for the maintenance of the equipment. We were explained that neither the MUW nor E.C. had an instrument by which this type of service could be provided by. Without a repair service contract, it is worrisome to think that this equipment might not be maintained in the foreseeable future.

3.5 WP5 (Innovation capacities building)

This WP aimed the recruitment and hiring of innovation manager; the transfer of know-how and networking routes through a series of networking and workshop events, and informing the scientists of the basics of intellectual rights.

The reviewers informed that all deliverables of the WP have been realized successfully. Three reports including the implemented IP protection and management strategy guidelines at the MUW (1), a report on transfer of know-how and networking including Science Business / KUL joint meeting and Pharma Days featuring leading MUW translational projects in oncology (2), and a final report on achieved innovation capacity and IP protection using TTO metrics (3); together with a “guidelines for technology transfer” brochure were prepared.

Altogether, the BASTION researchers have filed 6 patent applications related to diagnostic tools relevant to oncology.

Major difficulties that were encountered during this WP were explained as follows: 1. the lack of a competent tech transfer officer. 2. Too complicated administrative rules with unnecessary bureaucracy resulting in the frequent loss of the goal or idea that led to



the activity in the first place and generating distracting side issues. 3. The tender system which MUW uses delays reagent delivery up to several months.

The review committee recommended the BASTION team at the end of the first visitation to explain to the administrative personnel of MUW in a dedicated meeting how those strategies implemented under BASTION worked and how they could be copied in the University. The reviewers also recommended organizing a workshop directed primarily to the MUW personnel, dedicated to the licensing of a patents and methods by which the output of this and similar projects could be sustained.

After the second visitation, the reviewers stated that 8 seminars/training sessions aiming raising awareness on IP issues were completed. Moreover, additional science-related on-hands training/exposure related activities for children (<10y) were held. A major meeting (Startup Grind Warsaw) which aimed to inspire, connect and educate entrepreneurs; 2 workshops geared towards basic scientists to help develop their ideas towards a translational research project; a roundtable discussion that included BASTION and KU Leuven scientists where the commercialization of research output were completed successfully.

A web-based support group aiming at developing the collaboration between researchers primarily involved in tech-transfer issues (ochota-na-transfer) was developed.

Bridging science and business type of activities resulted in 3 projects and 2 grants. Two “pharma days” one in 2014 and the other in 2015, helped guide research scientists in the direction of translational research and product development strategies. Both meetings included representatives from many leaders of prominent pharmaceutical companies such as Pfizer, GSK, Astra Zeneca and similar.

The committee realizes that all patent applications were made via independent attorneys and not via the TTO of MUW, due to issues of competence, regarding the latter. The reviewers underscored that the MUW should make the competence of its TTO a top priority. They appreciated the educational material produced by the BASTION team that is geared to both scientists as well as the MUW administration in this regard.

3.6 WP6 (Project management)

The committee considers the management of the project an overall success. The newly employed scientists are enthusiastic and serious about their work, the utility of the new resources has been carefully planned, international links have been established and/or strengthened and scientific output has increased beyond expectations.

During the second report meeting the review committee was presented with the details of the planned budget and work allocated to individual WPs compared to those that were realized. Based on this presentation the reviewers concluded that what had been aimed for had been accomplished to an admirable extent.

The only WP where costs were overestimated was WP7 that included the work of this committee and of that held in February 2016. In this regard, the review committee would like to point out that in their opinion they could be more helpful had they been



invited during or the end of the first year of the project (instead they reviewed the project a year later than this date), when they could have helped to contribute to some issues that could have been brought up at that time. On the other hand, the reviewers realize that the E.C. considers this project to be a success and we also believe it to be so.

4. Summary and suggestions from evaluators

The review committee agrees that all WPs and deliverables listed in the original project submitted to E.C. have been completed as declared and that the BASTION team demonstrated diligence, hard work and an honest outlook throughout the project period. The reviewers indicate in their report that the BASTION group helped to establish a network of Polish scientists who now are willing to work in future projects as a team (exemplified with the Twinning grant STREAM, and various other grants for which the team applied jointly); helped better expose the BASTION scientist to the international scientific community, which resulted in fruitful collaborations and exchange of know-how; enabled non-scientists as well as scientist in Poland and internationally, to help develop a better sense of various science-related concepts; and lastly helped the MUW to develop a better research infrastructure.

In making their decisions, the review committee used the information presented during the review activities, in addition to reports summarizing the number of papers published and the impact factor of journals they were published in, grants applied to and those that were obtained, and employment information among others. The reviewers also participated in two of the meetings organized by BASTION and performed a site visitation.

The committee realizes the presence of several activities that clearly indicate the BASTION investment will be sustainable. These include (1) the establishment of new research groups with their own funding, some of which include companies as partners, (2) the fact that many researchers were successfully trained during this project either as team members or as participants during various workshops and meetings, which also served as a means to initiate long-term collaborations with participating scientists, (3) the sharing of equipment and experience with other local (non-BASTION) scientists, both within and outside Poland, (4) BASTION/MUW as a new name brand with a positive reputation, and (5) the STREAM project which aims the expansion of collaborative work with leading European institutions.

The committee wishes to raise the following points summarized below which, in their opinion, if improved, will significantly contribute to the scientific output of this team and those that collaborate with it.

Although it is very clear that BASTION scientists have published significantly more when compared to MUW scientists, it is also obvious to us that these publications include BASTION scientists more as co-authors than principal authors. The reviewers explained that they understand that this might be because the team was able to get involved in on-going research within Poland and more importantly at an international



scale through initiatives that were part of BASTION, but it is of utmost importance to continue these interactions that will sustain a healthy research activity and collaborations over the long run. The STREAM grant is a very positive development in this line. But the reviewers would ideally like to see that the scientist from the BASTION team are successful in attracting other European scientists who are willing to collaborate with them (as opposed to the other way around), which would lead to them publish as the major authors.

The reviewers realize that data coming from the new infrastructure including the imaging facility, IT infrastructure, automatic pipetting stations and NGS equipment appears only scarcely among the scientific output of the team. Although disappointing they realize that this might be because many projects that are based on the use of the new equipment have been recently initiated and that the output from them might take some time. However, a more important concern raised by the reviewers was the lack of a good plan in the MUW which would allow legitimate company-academic interactions. Many of the instruments obtained through BASTION are suitable for large-scale output rather than basic wet-lab experimentation. As the topic of this project was translational oncology, this is probably expected. During the final meeting that took place on the 22nd of February, 2016, the reviewers were presented with strategies by which patented inventions would be carried to the next step which is to develop these through companies working closely with the MUW and therefore the BASTION team. The reviewers mentioned that if the companies are allowed to interact with the MUW through clearly defined rules and a visionary approach is taken to foster this, the knowledge and experience which was obtained thus far and which will keep increasing could be put to very good use and this could also become a viable source of income for both the scientists as well as the MUW. The E.C. has made support of SMEs a major priority in H2020 and the reviewers considered that the sustainability of the success of the BASTION initiative will also depend on the success of biotech-science collaborations that involve BASTION scientists and their collaborators.

With the new NGS and IT infrastructure in MUW, the reviewers strongly recommend that the University should consider becoming a hub for the generation of genomic data as well as giving out bioinformatics service. They realize this would require the hiring of additional scientists and personnel. However, in the absence of this, the reviewers feel it remains unfair that neither the local team, nor those scientists who possibly could use these services benefit from the full potential of this investment.

The reviewers suspect some unresolved administrative issues that stem from the MUW might also be stalling progress: especially teaching duties are waived only minimally as the research load of scientist increases through the acquirement of novel grants; hiring technicians and other staff personnel is difficult due to lengthy bureaucracy and the shipment of consumables are delayed due to a tender system which certainly needs to be improved. The team also voiced their concerns about not being able to truly integrate with the facilities and infrastructure of the MUW. All of these are truly issues that ought to be relived as soon as possible. But they show the genuine will of all involved in



BASTION to maintain and improve state-of-the-art research activities, and in that sense are highly commendable. The reviewers strongly hope that as the research culture establishes itself in Poland, thanks to initiatives like BASTION, and the job definition of not only scientists but many administrative and service positions transform, these issues will ultimately be resolved.

5 Recommendations from IAB members:

Members of the IAB with due recognition accepted the evaluators' report on the implementation of the project within 36 months. During the meeting, together with the project team, the members of the IAB discussed the problems arising in the course of the project. Some recommendations up to the future have been made:

- MUW should be interested in setting up core facility laboratories which are currently not available. Core facilities should provide long-term positions for skilled research technicians operating complex research infrastructure,
- MUW administration should be more competent especially in legal aspects (legal office employees do not speak English, which delays processing all legal documents that are generated during international cooperation),
- the work efficiency of MUW administrations should be improved (administration staff is focused on solving the problems based on fixed procedures which will never cover all aspects of international collaborations),
- ineffective system for ordering reagents and research equipment,
- professional IP protection strategies should be developed,
- systems for cooperation between basic researchers and clinical practitioners should be developed, clinicians should be able to flexibly adjust their involvement in clinical and research activities,

Teaching duties should be flexibly adjusted to the involvement of research staff in research projects,

- top quality rather than number of publications should be the priority for the University,
- bioinformatics should be one of the top priorities for further research development.

Despite the obstacles mentioned above, the team leaders emphasized the high involvement of the team members, including employed postdocs - experienced researchers as well as IT specialists, in the research carried out within BASTION project and their motivation and diligence to overcome the difficulties



The outcomes of report presentation to authorities

The authorities have enthusiastically accepted the positive report from evaluators and underscored that the University is proud that the BASTION project was carried out at Medical University of Warsaw. Not only has it increased recognisability of the University and allowed to increase the research competency of MUW researchers in basic and translational oncology, but primarily the project allowed to understand the problems associated with project management, increased the awareness of the administrative and legal limitations at the University as well as of the importance of professional IP protection issues. A sobering fact was that the evaluators as well as members of International Advisory Board raised a number of issues that included insufficient communication skills of MUW administration staff (the necessity to translate all documents delays international cooperation) and especially that the tender system which MUW uses delays reagent delivery for up to several months. These issues should be solved immediately and will be the priority of the university authorities. Also lack of a genuine core facility that would integrate the research infrastructure of the university is recognized as an important issue. While it must be realized that building core facility requires substantial funds and cannot be realized immediately the university authorities declare to do their best to meet this insufficiency.

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