

Tertiary Education Strategy Feedback
Ministry of Education
PO Box 1666
WELLINGTON 6140

14 November 2013

Dear Madam or Sir,

Re: Draft Tertiary Education Strategy

NZBIO is the industry association for New Zealand's bioscience community. With over 60 corporate members and another 70 individuals, NZBIO has broad representation of the sector in the country from multi-national pharmaceutical companies to small start-ups. As well as what might be considered 'core biotech companies' - those for which bioscience is the main activity and are focused on the production of bioscience products - we represent companies and organisations involved in primary production - such as forestry, farming and food production, industrial and environmental research and technologies, high tech manufacturing, alternative fuels, human therapeutics, diagnostics and devices, animal health products, and biologically-based clean tech companies. We estimate that bioscience companies and the application of sophisticated biotechnology techniques in other industries contribute more than \$3bn per annum to the New Zealand economy.

The Tertiary Education Strategy is of considerable importance to our members. Access to qualified staff is regularly identified by our industry as a constraint to growth.^{1 2} The industry is built on high quality science and needs well qualified, experienced people at all levels of research, production and management. It is important that the New Zealand Tertiary Education system can provide these people.

In the draft Strategy, Priority 1: **Delivering skills for industry** is of most interest to our members and we strongly support its high position in the list of priorities. However, as might be expected of such a high level document, the strategy does not indicate the detail of how the priority will be addressed. The bioscience sector in New Zealand has been a leader in building connections between industry and the tertiary institutions because of its demand for sophisticated R&D. In particular, groups involved in bioscience have been

¹ Bioscience Survey 2011, Statistics NZ,
http://www.stats.govt.nz/browse_for_stats/industry_sectors/science_and_biotechnology/Bioscience_HOTP2_011.aspx

² Making Biotechnology Work for New Zealand, NZBIO, 2008
http://www.stats.govt.nz/browse_for_stats/industry_sectors/science_and_biotechnology/Bioscience_HOTP2_011.aspx

behind the development of specialised tertiary education courses with strong industry links. These programmes include the Master of Bioscience Enterprise at Auckland,³ Undergraduate course in Biotechnology⁴ and the new Master of Advanced Technology Enterprise⁵ at Victoria University as well as the Applied Science⁶ courses at the University of Otago.

NZBIO believes the links between business and tertiary institutions can be strengthened, and the ability of the institutions to deliver the skills industry needs in high technology industries by courses like those listed above which:

- Deliver interdisciplinary content in science, enterprise and commerce;
- Involve lecturers and tutors from industry;
- Have industry directly involved in developing subject material and curricula;
- Provide opportunities such as seminars and networking events for students and industry people to meet, and, most importantly;
- Provide internship opportunities for 3rd and 4th year undergraduate and post-graduate students.

The Tertiary Education Strategy is an opportunity both to encourage institutions to build these courses and also provide practical assistance. Specifically, the existing internship programs have some design limitations. Some firms may not have the resources to take on interns and provide them with what they need for a successful internship. Firms may also not initially see value in an internship. Where an intern has to move to work with a firm then the student may not be able to afford the internship. These issues need to be solved by providing funding for the internships. Currently funding is available through Callaghan Innovation's R&D Student Grants Scheme⁷ but the applications are relatively complex for both student and firm and, wholly understandably given Callaghan Innovation's focus, are firm centric.

NZBIO recommends that funding for studentships not requiring an industry contribution be allocated to approved tertiary education courses through Vote Education to ensure that all participants have a funded place, to align the focus on student education and to involve a wider range of businesses. This could replace the Undergraduate Schemes administered through Callaghan Innovation and supplement the Fellowship and Post-Graduate schemes.

Funding for the development of wider industry contacts for students through support for forums and enabling students to undertake industry training programmes will also assist in producing graduates who are suitable for industry.

NZBIO also supports Priority 5: **Strengthening research-based institutions** although the text under the heading seems to be more about strengthening Tertiary Institution/ Industry Linkages which might better sit under Priority 1. Institutions with a world leading research

³ <http://www.science.auckland.ac.nz/uoa/home/about/our-programmes/op-mbioent>

⁴ <http://www.victoria.ac.nz/sbs/study/subjects/btec>

⁵ <http://www.victoria.ac.nz/psyc/study/postgraduate-study/advanced-technology-enterprise>

⁶ <http://www.appsci.otago.ac.nz/>

⁷ <http://www.callaghaninnovation.govt.nz/funding/rd-student-grants>

base are best able to train students to be the world class researchers needed by New Zealand's bioscience industry and also to generate innovations and inspire the entrepreneurship and intrapreneurship from which New Zealand can generate international high-growth technology-based businesses. This requires increasing investment in the research to be undertaken by Tertiary Institutions. It also requires that researchers have incentives where appropriate to be involved in teaching, enterprise and technology transfer activity so their research is actually used rather than simply read about in the academic literature. Or at the very least, disincentives to researchers teaching and undertaking commercialisation such as the low ranking of these activities in promotion decisions be removed. While NZBIO recognises that not all academic staff want or are able to build industry contacts, we do not want to see those that do disadvantaged.

NZBIO recommends that funding for research in tertiary institutions be increased.

NZBIO recommends that work on recognising teaching quality and technology transfer activity in Performance Based Research Fund rankings continues and that Tertiary Education Institutes continue to be encouraged to take a broad range of criteria into staff promotion decisions. We would not wish to see staff 'forced' into commercialisation activity where it will not be useful or effective but we do want to be sure that those who do undertake such activity are rewarded appropriately.

One critical aspect the Strategy does not address is how Tertiary Education Institutions can help improve science literacy in the New Zealand population. This would be of long term benefit to society through better understanding of the risks and benefits of technologies and how New Zealand will face complex issues such as energy provision and climate change. The Strategy needs to address the issues raised in Professor Sir Peter Gluckman's paper '*Interpreting science – implications for public understanding, advocacy and policy formation.*'⁸ It also needs to lay out how Tertiary Institutions will contribute the special leadership challenge for the government to take a lead in improving the science capacities and the public's understanding of science recommended by the National Science Challenges Panel.

Another issue not addressed is the limiting of student loans and particularly allowances to a maximum number of years. This penalises students undertaking longer courses such as postgraduate degrees; where the bioscience industry has a particular requirement for PhDs. While student loans can be extended to cover postgraduate degrees, student allowances are limited to 200 weeks which seriously discriminates against students without financial resources and may force them to leave study early, to the detriment of Bioscience sector.

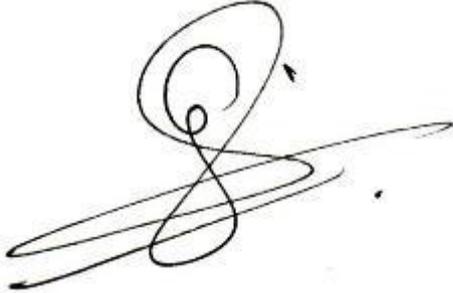
Thank you for the opportunity to comment on the Draft Strategy. Overall, NZBIO is in favour of the sentiments expressed and the general priorities listed but it is clear there is a considerable amount of work still to be done to reduce these to practical initiatives that will achieve the outcomes sought. The bioscience industry, in New Zealand and

⁸ <http://www.pmcsa.org.nz/wp-content/uploads/Interpreting-Science-April-2013.pdf>

internationally, is based on strong links between industry and academia. NZBIO believes its members have much to contribute in ensuring these links remain strong.

No part of this submission needs to be withheld under the Official Information Act 1982.

Yours sincerely,

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

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