

LEADERSHIP CAN BE TAUGHT IN AN UNDERGRADUATE SCIENCE COURSE

Rowan Brookes^a, Susie Ho^b, Cristina Varsavsky^c

Presenting Author: Rowan Brookes (rowan.brookes@monash.edu)

^{a,b}School of Biological Sciences, Monash University, Clayton VIC 3800, Australia

^cFaculty of Science, Monash University, Clayton VIC 3800, Australia

KEYWORDS: Adaptive leadership, science education, communication, pedagogy

ABSTRACT

In an increasingly complex, diverse and ambiguous world there is a growing need to develop effective leadership capacity. Leadership education has traditionally been the domain of business, management and organisational professional development. Undergraduate leadership programs in the sciences are uncommon, with most science courses focused exclusively on building scientific research skills. Scientifically trained decision makers in a leadership role are a rarity with a noticeable dearth of social, political and economic decision makers with a science education. This year, the Science Faculty at Monash University launched an undergraduate course that explicitly incorporated leadership within the curriculum. The Bachelor of Science Advanced (Global Challenges) weaves leadership, communication and entrepreneurship into a traditional science degree with the intent of developing global citizens who will be able to instigate action and affect change. In this course students learn adaptive leadership through an experiential learning approach. Leadership can be taught when there is a recognition that true leadership capability lies beyond personal charisma or the gift of the chosen few, but is shaped gradually through experience. Within this course the development of leadership capacity is undertaken by (i) encouraging personal agency in all students to empower leadership at all levels, (ii) building persuasive communication skills and leadership presence particularly to mobilise action in others, (iii) fostering global citizenship and the ability to negotiate systemic and complex issues whilst demonstrating ethical decision making, and (iv) encouraging students to respond adaptively to change by thinking creatively, taking risks and experiencing failure. In this course the pedagogical approach used is case-in-point teaching, group-based activities, self-reflection, peer review and the case method approach. Our experience to date shows that teaching leadership within a science undergraduate course can be accomplished, but there are several considerations for such courses within the university context.

Proceedings of the Australian Conference on Science and Mathematics Education, University of Sydney, Sept 29th to Sept 30th, 2014, page 12, ISBN Number 978-0-9871834-3-9.