



The Art and Science of IPM Leadership Development for the 21st Century

Connie I. Reimers-Hild, E.A. "Short" Heinrichs, John E. Foster and Deana M. Namuth

Abstract:

Entrepreneurial leaders are essential to the success of all organizations, including those focusing in the area of IPM. In order to be successful in the 21st Century, entrepreneurial IPM leaders must be change makers, innovators, calculated risk takers and high achievers. Thus, the specific leadership development needs of IPM professionals are very complex and unique. IPM leadership development can be described as both an art and a science. IPM leadership development is an art in that social science proficiencies must be addressed. These proficiencies include the development of interpersonal skills, the ability to facilitate and work in teams, the capacity to create and maintain relationships and networks and the capabilities needed to deal with diversity and change. IPM leadership development is also a science in that the knowledge and skills associated with the hard sciences must be included in the curriculum. IPM professionals must possess knowledge in a number of areas, such as entomology, plant pathology, weed science, agronomy, ecology, horticulture, chemistry, plant breeding, genetics and biochemistry. IPM leadership training must integrate social science, hard science and entrepreneurial leadership development in order to be effective. The need to develop this essential combination of talent and expertise can be achieved by participating in unique professional development opportunities offered by faculty at the University of Nebraska. Current and future IPM leadership development opportunities are presented and discussed.

The Importance of Entrepreneurial Individuals & Leaders in the 21st Century:

The term "entrepreneurial" is used to describe people or employees who are innovative, creative and have the ability to keep up with change in a society that is evolving at an increasingly rapid pace (O'Connor & Fiol, 2002). Research indicates that entrepreneurial individuals are even more important in the current knowledge economy, which is characterized by continuously evolving technologies and change (Brown & Eisenhardt, 1998). Individuals must be able to adapt to these rapid changes in order to advance themselves, their places of employment and their own societies and cultures. Globalization, combined with the world's rapid rate of change and increasingly competitive environment, are driving the importance of developing and employing entrepreneurial individuals (Krueger, 2000) and leaders (Gupta, MacMillan & Surie, 2004). Researchers argue that entrepreneurial strategies are essential to the success of individuals, new ventures and existing organizations (McGrath & MacMillan, 2000). Countries, as well as individual organizations and institutions of higher education, will benefit by developing the entrepreneurial leadership capabilities of individuals (Reimers-Hild, 2005). According to the web site, Entrepreneurial You!:

An Entrepreneurial Leader:

- Constantly Leads Successful Change
- Develops Leaders at Every Level of the Organization
- Supports and Cultivates an Entrepreneurial Atmosphere
- Establishes a Leadership Culture throughout Organizations Designed to Empower Individuals
- Rejuvenates and Cultivates Innovation & Creativity
- Creates a Global Mindset in Individuals and Organizations that Embraces Change and Values Diversity
- Leverages both Human Capital (Knowledge, Skills and Abilities) and Social Capital (Networks and Relationships) at the individual and organizational levels

IPM Leadership Development:

Entrepreneurial leaders are necessary in all organizations, including those that focus on IPM. Participatory IPM (PIPM) serves as a model, which demonstrates the successful implementation of IPM programs. PIPM has three key components: 1) Problem Identification, 2) Research and 3) Communication, Extension and Training Activities (Heinrichs and De Datta, 2005). The first two key components (Problem Identification and Research) require IPM professionals to possess knowledge in a number of hard science areas, such as entomology, plant pathology, weed science, agronomy, ecology, horticulture, chemistry, plant breeding, genetics and biochemistry. However, the third key component (Communication, Extension and Training) requires knowledge and skills typically associated with the social sciences of leadership, change management, organizational development, sociology, education and communication. Successful IPM organizations must consist of entrepreneurial leaders and individuals who have the ability to utilize both hard and social science skills and abilities in order to implement and disseminate successful IPM programs.

IPM education and training programs should be interdisciplinary in nature and include a combination of hard and social science courses. IPM training and education programs should also provide individuals with opportunities to develop their human and social capital as well as their leadership capacity. High quality IPM professional development opportunities should include formal course work in addition to career development opportunities such as internships and mentoring programs. The combination of developing hard and social science skills with a focus on entrepreneurial leadership development increases IPM organizations' chances of success in the 21st Century.

Opportunities to Combine the Art and Science of IPM Leadership Development:

A number of on-campus and distance-delivered courses are currently available through the Departments of Entomology, Agronomy and Horticulture and Agricultural Leadership, Education and Communication at the University of Nebraska-Lincoln. These courses can be used to develop a number of the hard science and social science skills and abilities of IPM professionals. Complete listings of these courses are available via the Internet at the Web Site addresses listed below.

Your Opportunity to Influence the Future of IPM Training, Education & Leadership Development:

A host of new non-credit courses, workshops and certificate programs designed to provide an interdisciplinary approach to IPM training, education and leadership development are currently being assembled. As a global IPM professional, you now have the opportunity to provide input on the development and delivery of these cutting-edge programs. A worldwide research project is currently being conducted to determine the specific educational needs of IPM professionals with a focus on national research and technology transfer programs, international IPM projects and international agricultural centers. To learn more about how you can shape and influence the future of IPM through education and training, please contact Dr. Connie Reimers-Hild via e-mail (creimers2@unl.edu) or phone (1-402-624-8030).

University of Nebraska-Lincoln Web Sites:

Department of Agricultural Leadership, Education & Communication at the University of Nebraska-Lincoln: <http://aglec.unl.edu/>

Department of Agronomy and Horticulture at the University of Nebraska-Lincoln: <http://agronomy.unl.edu/>

Department of Entomology at the University of Nebraska-Lincoln: <http://entomology.unl.edu/>

University of Nebraska-Lincoln: <http://www.unl.edu/>

References Cited:

Brown, S. L., & Eisenhardt, K. M. (1998). *Competing on the edge: Strategy as structured chaos*. Boston, MA: Harvard Business School Press.

Entrepreneurial You! Retrieved March 25, 2006, from <http://www.entrepreneurialyou.com/>

Gupta, V., MacMillan, I.C. & Surie, G. (2005). Entrepreneurial leadership: Developing and measuring a cross-cultural construct. *Journal of Business Venturing*, 19(2), 241-260.

Heinrichs, E.A., & De Datta, S.K. (2005). Lessons Learned. In G.W. Norton, E.A. Heinrichs, G.C. Luther & M.E. Irwin (Eds.), *Globalizing integrated pest management: A participatory research process* (pp. 293-306). Ames, IA: Blackwell.

Krueger, N. F. (2000). The cognitive infrastructure of opportunity emergence. *Entrepreneurship Theory and Practice*, 24(3), 5-23.

McGrath, R., & MacMillan, I. (2000). *The entrepreneurial mindset*. Boston, MA: Harvard Business School Press.

O'Connor, E. J., & Fiol, C. M. (2002). Mindful over mindless: Learning to think like an entrepreneur. *The Physician Executive*, 28(4), 18-23.

Reimers-Hild, C.I. 2005. *Locus of control, need for achievement and risk taking propensity: A framework for the entrepreneurial learner of the 21st Century*. Unpublished doctoral dissertation, University of Nebraska, Lincoln.

