Reflective Essays

© *Journal of Higher Education Outreach and Engagement*, Volume 18, Number 1, p. 155, (2014)
 ISSN 1534-6104

Linking Academic and Community Guidelines for Community-Engaged Scholarship

Robin Maria DeLugan, Stergios Roussos, and Geneva Skram

Abstract

Research universities seeking to promote community-engaged scholarship (CES), defined here as research of mutual benefit to community and academic interests, will discover that it requires capacity building and institutional support. At the University of California at Merced, our 7-year experience in building a new public research university that integrates CES into the fabric of the campus has benefited from the lessons of pioneers in the field. We have also gained valuable experiences that can serve those who wish to integrate CES into their research and problem-solving activities. In this article, we extend Blanchard et al.'s *(2009)* useful guide for faculty development in CES. By adding reference to the competencies that can guide community participation in and support of CES, the expanded guide encompasses both academic and community interests and highlights best practices necessary for supporting CES in our universities and communities.

Introduction

In fall 2005 the University of California (UC) opened the doors of its 10th campus, University of California, Merced (UCM), with full awareness that locating it in the Central San Joaquin Valley was a response to a region desperate for problem-solving research. In addition to deep poverty, the region faces grave disparities related to health, economy, environment, and education. Thus, building a 21st-century research university in an underserved region of the state created an ideal opportunity to integrate the values of community-engaged scholarship (CES) into the fabric of the university and community alike. We define CES as research that is of mutual benefit to community and academic interests. Community is commonly defined as a group of people sharing a common goal, geographic area, or both. CES is guided by a few principles and by key questions like these: Does the research matter to the community it is focused upon? Do community stakeholders have a meaningful role in the research design? How will research results be disseminated to the community and for what ends? How does the research serve the goals of the academic partners?

UCM, like many universities in the United States, seeks ways to become more civically engaged with its community and the broader public. Civic engagement extends to practices of teaching, research, and public service. In December 2006, the Carnegie Foundation for the Advancement of Teaching, the independent body that informs the classification of our diverse university contexts and conducts research and offers policy on the improvement of teaching and learning, confirmed the trend toward civic engagement in higher education when it introduced the elective classification for "community-engaged" colleges and universities. The Carnegie Foundation *(n.d.)* defines community engagement as "describing the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity."

The Carnegie classification for Community Engagement applies across all campus activities to involve faculty, students, and staff who make contributions via teaching, learning, research, service, volunteerism, philanthropy, and other activities. The classification includes CES but is not limited to it. Driscoll *(2008)* analyzed information from the 145 universities that applied for the inaugural opportunity to receive the Carnegie Foundation's Community Engagement classification. Ultimately, 76 colleges and universities were recognized with the new Carnegie category. Driscoll attributed shortcomings in many applications to a lack of core competencies necessary for successful CES. For example, unsuccessful institutions did not provide documentation of having assessed the "community's need for and perception of the institution's engagement" and showed an absence of "developing substantive roles for the community in creating the institution's plans for that engagement" *(p. 41)*. This points to the need for genuine reciprocity between community and university actors. Another challenge noted by Driscoll is the lack of significant institutional support for faculty who engage in this work. Whether providing workshops, seminars, minigrants, and/or travel to conferences, academic institutions can do more to recognize and reward CES, particularly in the review, promotion, and tenure process. Community stakeholders also have an important role to play in faculty development for CES and career success.

In 2005 the University of California (UC) demonstrated its interest in community engagement when a report on civic engagement was generated by the Center for Studies in Higher Education

at UC Berkeley *(Anderson & Douglass, 2005)*. The report outlined the following potential benefits of increasing civic engagement:

1. bolstering the links between civic and academic achievement and between research and teaching;
2. improving diversity, student retention, and time to degree;
3. reenergizing the faculty around scholarship;
4. connecting the university to policymakers;
5. building interdisciplinary research capacity;
6. building a research community around California's most challenging policy issues;
7. bringing in new resources and funding;
8. building social capital among students, faculty, and communities;
9. leveraging UC's multicampus structure and size; and
10. allowing UC to become a leader in a growing national movement.

For UC and other universities, it is increasingly clear that a better alignment between academic and community interests allows the university to fulfill its research mission *(Kellogg Commission on the Future of State and Land-Grant Universities, 1999, 2000)*. Illustrating the relevance of research to local, regional, and statewide concerns and priorities will also lead to an increase in public support for the university. The current economic crisis and the trend toward reducing state support to the UC system make such support increasingly essential.

CES can also motivate and enhance public participation in research. Conducting research *with* communities, as opposed to conducting research *on* communities, is quickly becoming the standard approach to gaining public participation in research. Recognizing and valuing the knowledge of community members and finding meaningful opportunities for their participation in research—including the co-creation of knowledge—is transforming many traditional modes of conducting academic research. Another change in academic practices that has become a cornerstone best practice for CES is making results of research available to communities as well as to academic audiences. Furthermore, researchers engaged in CES are asked to be explicit about solutions

or policy implications that might accompany community-based research, and to share such information with key stakeholders.

The Movement to Increase CES

There is a growing academic literature about CES *(Fitzgerald, Burack, & Seifer, 2010a, 2010b)*. Most literature traces the impetus for CES to Ernest Boyer's *(1990) Scholarship Reconsidered: Priorities of the Professoriate.* Classic references also include Glassick, Huber, and Maeroff *(1997)* and Holland *(1997).* In the years since that seminal publication, many advances have been made to create networks, provide resources, and build capacity for CES. Two organizations lead the national CES movement; Campus Compact and Community-Campus Partnerships for Health. Campus Compact was founded in 1985 to support colleges and universities in creating support structures for student civic engagement. Today it is a coalition of almost 1,200 colleges and universities in the United States that promote "public and community service that develops students' citizenship skills, helps campuses forge effective community partnerships, and provides resources and training for faculty seeking to integrate civic and community-based learning into the curriculum" *(Campus Compact, n.d.)*.

In addition to supporting student civic engagement through learning and service, Campus Compact takes on initiatives related to faculty development for CES. It serves as a clearinghouse for information on topics such as rationales for giving CES standing in research universities; policies for encouraging and assessing CES in review, promotion, and tenure processes; evaluation criteria for assessing CES in faculty review; and how to demonstrate quality and impacts of CES.

Community-Campus Partnerships for Health (CCPH) was founded in 1996. Like Campus Compact, it has developed a network of over 1,200 communities and campuses across North America. It serves as a resource for universities and communities alike seeking to build capacity for CES. In 2008, a team of high-level university administrators, faculty, and community partners from UCM was selected by CCPH to participate in the Community-Engaged Scholarship Faculty Development Charrette at the University of North Carolina at Chapel Hill organized by CCPH and sponsored by the Fund for the Improvement of Post-Secondary Education (FIPSE), an office of the United States Department of Education. Through this event we interacted with a network of national leaders who shared lessons learned and provided templates for decision

making, policies, and practices that can facilitate the implementation of CES across campus and in communities.

Over the past 7 years, efforts to implement CES at UCM have benefited from the support of the chancellor and senior faculty and administrators. In 2009 the Chancellor's Task Force on Community Engaged Scholarship was established. The task force undertook the following activities: identify who is engaged in CES at UCM as well as other UCs; establish opportunities for learning about CES for UCM faculty and people from the community; disseminate knowledge about CES to UCM faculty; establish a liaison for interactions between community and faculty to develop research opportunities; identify funding opportunities to support CES; and develop a community advisory board to help facilitate CES at UCM. This work was greatly enhanced in 2011 when the task force was awarded a 2-year grant from The California Endowment. Geneva Skram was hired as a liaison between campus and community and to help build an infrastructure for CES. Building trusting relationships with community partners continues to be fundamental to the process.

As anticipated, many faculty and community stakeholders who wish to participate in CES require professional development to do so. We designed a series of workshops with community members, faculty, and students to build familiarity with CES and reinforce best practices. We introduced the community to the faculty roles and responsibilities at a research intensive university to underscore how mutual benefit is necessary for faculty participation; that is, faculty need to generate scholarship. Simultaneously, the community was introduced to examples of CES projects. Another workshop involved UCM faculty who worked with community members to translate community topics into research questions. The workshops that took place on campus presented principles of CES, including best practices, finding funding for CES, and incorporating CES into course syllabi. We also engaged in intense outreach efforts to identify research projects and then match them with relevant research partners. After our first year, we created nearly two dozen CES projects that engage UCM faculty, graduate students, undergraduate students, and community organizations both large and small.

Working with university researchers and community members to forge new CES collaborations, it became increasingly clear that our efforts had to extend beyond the matchmaking that resulted in new research partnerships toward institutionalizing faculty development for CES. Supporting faculty CES includes building the

capacity of faculty to develop mutually beneficial research projects with community partners. It also involves establishing institutional mechanisms that recognize and reward CES. If faculty CES is not recognized through the review, promotion, and tenure process, or through other types of support, many faculty will be reluctant to conduct this type of research. We decided that assessing the current policies, programs, and practices that support or hinder faculty CES would provide valuable information that could assist in creating a strategy for faculty professional development related to CES. In 2013, the University of California Office of the President provided a grant to develop this project for UCM and the other nine campuses of the UC System. A survey is currently being conducted that will help identify faculty and other UC researchers performing community-based research. It will also attempt to gauge barriers and opportunities for growing CES within the UC system. By fall 2013, we will prepare a report summarizing our findings, circulate it on all 10 campuses, and initiate conversations with interested faculty to establish a UC systemwide network. At the time of the grant award, the Chancellor's Task Force on Community Engaged Scholarship transitioned into the Resource Center for Community Engaged Scholarship (ReCCES), a major step toward institutionalizing CES at UCM.

An Extended Model for Participation in CES

We continue to enlist more faculty, students, and community partners for CES, and to explore how to develop the competencies required to practice it. In doing so, we frequently draw upon the recommendations and lessons learned from others throughout the UC System and across the nation *(Blanchard, Strauss, & Webb, 2012; Bringle, Hatcher, & Holland, 2007; Gelmon, Blanchard, Ryan, & Seifer, 2012; Sandmann, Saltmarsh, & O'Meara, 2008; Seifer, Blanchard, Jordan, Gelmon, & McGinley, 2012).* One particularly valuable resource is the faculty development plan offered by Blanchard et al. *(2009)* outlining faculty competencies for successful CES. The plan lists novice, intermediate, and advanced levels of CES, with advanced levels focused primarily on the institutionalization of CES on the campus. Drawing on our 7-year effort to promote CES at a new research university, we decided to extend Blanchard et al.'s *(2009)* useful guide for faculty development in CES. We maintain the novice, intermediate, and advanced competency levels and expand that guide with two fundamental types of addition: (1) competencies for community participation in and support of CES and (2) questions for academic and community partners that point

to the work required for achieving the appropriate competency. This expanded guide encompasses both academic and community interests and highlights best practices necessary for supporting CES in our universities and communities. In this regard, we feel we are attentive to the reciprocal process between community and campus that is essential for successful collaboration in CES.

Table 1. Extending a Model for CES Faculty Development to Guide Academic and Community Participation in CES

	Competencies required for successful practice of community-engaged scholarship	Questions required of both academic and community partners
Novice	1. Understanding of the concepts of community engagement and community-engaged scholarship (CES), and familiarity with basic literature and history of CES (i.e., Boyer, Glassick, etc.) including the research process.	• How is the project mutually beneficial to both the academic partner and community partner? • How do community partners understand the purpose and process of research at a university? • How do academic partners understand the purpose and process of community-based organizations?
Novice	2. Understanding of the various contributors to community issues (economic, social, behavioral, political, environmental); developing skills and commitment for fostering community and social change.	• How can community and academic partners collaborate to identify their purpose, goals, and priorities for their project? • How does this project advance knowledge or contribute to the academic discipline? • How is the project relevant to local community needs and concerns? • How does this project develop skills and commitment for fostering community and social change?
Novice to Intermediate	3. Knowledge of and skills in applying the principles of CES in theory and practice, including a. Principles b. Theoretical frameworks c. Models and methods of planning d. Implementation and evaluation (For example: community governance, equitable participation at all levels, local relevance of public health problems, dissemination of findings, trust building, benefits to community-involved community partnerships, service & learning objectives, fostering critical reflection, meaningful community service activities in response to community-identified concerns)	• How does the work plan describe the agreement (memorandum of understanding) between the partners, including roles, responsibilities, and timelines? • Does the work plan distribute responsibilities, risks, and rewards in a way that will best meet the objectives of the project (time spent; costs; liabilities, etc.)? • How does the work plan include measurable milestones that contribute to the progress of the academic partner (publications; timelines; review, promotion, and tenure schedule/criteria; etc.)? • How does the work plan include measureable milestones that contribute to the progress of the community partner (fulfillment of mission; service to clients; funding, etc.)?What is the plan for dissemination of results? Does the work plan describe how data will be accurately and appropriately shared with both academic and community audiences?

Novice	Identify how to keep community members and researchers safe from harm during the project.	• How have the community and academic partners discussed potential difficulties or conflicts related to the stages of planning, implementing, and disseminating? Is there a plan in place to resolve these issues?
Intermediate	4. Ability to work effectively in and with diverse communities.	• How does the project involve and/or serve diverse populations in the community? • How are academic partners engaging the community in a way that appropriately represents its diversity? For example, has diversity been considered in terms of the population's cultural, racial, ethnic, religious, and community sectors (governmental, public, private, faith based)? • How are community partners engaging the campus in a way that appropriately represents its diversity? For example, has diversity been considered in terms of campus population's culture, racial, ethnic,religious,and areas of study (social sciences, arts, humanities, engineering, natural sciences)?

Intermediate	5. Ability to negotiate across community-academic groups	• Have the community and academic partners discussed potential conflicts related to planning, implementing, and disseminating their work? Does the project have a plan for finding consensus and compromising when issues arise?
		• Does the work plan include a formal process to review and revise as necessary the following:
		  • Responsibilities, risks, and rewards
		  • Measurable milestones that contribute to the progress of the academic partner
		  • Measurable milestones that contribute to the progress of the community partner

Intermediate	6.Ability to write grants expressing CED principles and approaches.	• What process exists to support academic and community partner's capacity to fund CES work (e.g., in-kind, donations, and grants received)?
		  • Training to identify, write and manage grants expressing CES principles and approaches
		  • Networking and building relationships with funders and investors interested in CES
		• How are academic and community partners distributing funds in a way that truly values the contributions of all participants?
		• How is the management of funds decided in a way that ensures people and organizations are reimbursed in a legal and timely fashion?

Intermediate	7. Ability to write articles based on CES processes and outcomes for peer-reviewed publications.	• What process exists to support the capacity of academic and community partners to disseminate the lessons and results of CES work (for example: peer reviewed, professional, and lay sources)?
		  ◦ Training to identify appropriate dissemination sources and to write, publish, and present work expressing CES principles and approaches
		  ◦ Networking and building relationships with editors, publishers, press/media, and other stakeholders in the dissemination process
		• How are decisions made and resources distributed to ensure that written materials, including results, reports, articles, and web information, are produced?
		• How will the lessons and results be disseminated (examples: white papers, radio, articles in mass media and academic journals) and to which audiences?
		• How will community and academic partners collaborate to help each other present lessons and results in a way that each of their stakeholders can understand (e.g., peer review vs. low literacy clients)?

Intermediate to Advanced	8. Ability to transfer skills to the community, thereby enhancing community capacity, and ability to share skills with other faculty. Recognition by the community.	• What infrastructure and capacity exists on campus and in the community to build the skills and raise awareness for CES within community organizations and academic units? (For example faculty and student training; workshops for community organizers and other professionals with ties to CES; support for research-based service-learning; inclusion of community members in relevant courses on-campus.)/
Intermediate to Advanced	9. Knowledge and successful application of definition of CES, CES benchmarks, scholarly products, outcomes, and measures of quality.	• What infrastructure and capacity exists on campus and in the community to support and promote CES within community organizations and academic units. (For example,:objectives within strategic plans to promote CES and forums to present research results).
Advanced	10. Understanding of the policy implications of CES and ability to work with communities in translating the process and findings of CES into policy.	• Can the academic partner's project serve as an example in institutionalizing CES on campus and in promotion and tenure policy? • Can the community member/organization's project translate into promoting and/or supporting a formal organizational policy in engaging researchers and the university in work?
Advanced	11. Ability to balance tasks in academia (i.e., research, teaching, service) posing special challenges to those engaged in CES in order to thrive in an academic environment.	• Does the academic partner understand and have sensitivity to the guiding principles, realities, conditions, mission, goals, etc. of the community member/organization? • Does the community partner have a sensitivity to the guiding principles, realities, conditions, academic requirements and responsibilities, etc. of the academic partner?
Advanced	12. Ability to effectively describe the scholarly components of the work in a portfolio for review, promotion, and/or tenure.	• Can the academic partner describe the project's relationship with the community member/organization's mission, goals, target population, etc.? • Can the community partner describe the relationship of the project to academic requirements (publishing, tenure, etc.)?

Advanced	13. Knowledge of RPT process and its relationship with CES, ability to serve on RPT committee.	• How does the academic partner use existing models for incorporating CES into the RPT process? • How capable is the academic partner in making the case for CES to count in the RPT process? • How well do community partners understand the RPT process and how to arrange their work with the academic partner to fit the RPT process and expectations? • How capable is the community partner in advocating for the academic partner's CES to count for RPT? • How knowledgeable is the academic partner of processes similar to RPT that promote and support the professional development of the community partner?
Advanced	14. Ability to mentor student and junior faculty in establishing and builiding CES-based portfolio.	• Can the faculty member mentor others in CES, including students, staff, other faculty, and community members/organizations? • Can the community members/organizations mentor others in CES, including university students, staff, faculty, in addition to other community members of organizations?

Note: Based on the original faculty development plan by L. Blanchard et al,, 2009, Models for faculty development: What does it take to be a community-engaged scholar? *Metropolitan Universities, 20*(2), pp. 47-65.

We see our expansion of the Blanchard et al. *(2009)* framework foremost as a contribution to the dynamic and ever-evolving conversation about how to increase usage of and support for CES. Consequently, we hope the modified framework will generate discussion and critique. We are very familiar with CES literature, discussions, and debates and recognize the importance of the Blanchard framework; however, we also wanted to address the community side of successful CES collaborations. One common thread in the literature and within our own work is the focus on changes within the university, including changes of approach for supporting communities. However, less emphasis in the literature is seen on how to help communities understand and undertake responsibility for their role in CES. We spent a semester analyzing the Blanchard framework to consider how to transform it into a more useful tool, not only by addressing community roles and responsibilities, but also by identifying key questions that can guide the necessary competencies. It is worth noting that we approached the framework after having completed a year of designing and offering a series of CES capacity-building workshops for academic and community partners, and that experience informed our discussions and analysis. Using the Blanchard framework to critically reflect on our work, we examined the roles and responsibilities, of the community as part of this expanded framework.

The original framework addresses competencies for academic research partners as well as that of the institution; however, the

expanded framework makes explicit the community-level competencies. We realize that all partners in CES ought to have an understanding of what programs, policies, and resources can enhance CES, but we acknowledge that sections of the matrix will be relevant to some decision-makers more than others. To gauge the strengths and limitations of the modified framework, we piloted it with our faculty, graduate students, and community partners currently involved in CES. Faculty and community partners who have extensive CES experience indicated it was of value, with one faculty member describing it as

> a very useful tool for university researchers and community partners engaging in CES . . . (and) . . . as useful in priming discussions of various issues that lead to richer, more high-quality projects as well as productive, efficient, and smooth interactions over the course of the project. *(L. Cameron, personal communication, March 29, 2013)*

This person would not necessarily use the framework as a checklist to be completed at the outset of the research partnership, but would instead incorporate it into the research journey. She acknowledged that certain items may be relevant to some projects over others, but that there is nothing that she would delete from the matrix.

One community partner responded that "community participants need a good understanding of the prerequisites of participation" *(D. Lockridge, personal communication, March 13, 2013)* and that the matrix is well written and comprehensive. He specifically suggested adding a reference to informing the community participants that the IRB process can take some time, lest they become impatient. A doctoral student challenged us as to whether the first novice-level expectation of familiarity with basic CES history and literature is mostly relevant to the academic versus the community partner. He also suggested modifications such as having the second competency emphasize the importance of "sustainable" community and social change for CES projects. This thoughtful student sees the novice to intermediate knowledge and skills referenced in Item 3 as extremely valuable: "These are all important. I wish I had learned some of them right away. Year one, first semester. Not necessarily everything, but a crash course. I still don't know most of this" *(P. Carroll, personal communication, March 10, 2013).* Responding to the items on the matrix, he stated that he would like more help in

identifying appropriate dissemination sources. He concludes that CES training workshops that can reinforce the specifics addressed in the framework are needed for both academic and community partners.

These results indicate that the expanded framework will have useful applications for improving the quality of CES by clarifying the competencies that are unique to and shared by academic and community stakeholders. The clarification of these competencies allows us to accomplish an important goal for our campus that may have value for others to follow. This goal is providing tools and methods that our research partners, campus, and community decision-makers can use to conduct CES by incorporating elements of the framework into CES training materials. For example, the competencies that connect to research design will be incorporated into CES workshops and made available via our website, whereas information on the institutional competencies will be directed to those who are involved with strategic planning, programs and policies, and resources. We consider this a work in progress, and we hope it will stimulate discussion and benefit the efforts of others promoting and supporting CES on their campuses and in their communities.

Acknowledgment

The work presented in this essay was made possible through funding from the Office of the Chancellor at University of California, Merced and The California Endowment, Building Healthy Communities: Southwest Merced, East Merced County.

References

Anderson, J., & Douglass, J. A. (with Agogino, A., & Komar, K. L.). (2005). *Promoting civic engagement at the University of California: Recommendations from the Strategy Group on Civic and Academic Engagement.* Berkeley, CA: Center for Studies in Higher Education, University of California, Berkeley.

Blanchard, L. W., Hanssmann, C., Strauss, R. P., Belliard, J. C., Krichbaum, K., Waters, E., & Seifer, S. D. (2009). Models for faculty development: What does it take to be a community-engaged scholar? *Metropolitan Universities, 20*(2), 47–65.

Blanchard, L. W., Strauss, R. P., & Webb, L. (2012). Engaged scholarship at the University of North Carolina at Chapel Hill: Campus integration and faculty development. *Journal of Higher Education Outreach and*

Engagement, 16(1), 97–128. Retrieved from http://openjournals.libs.uga.edu/index.php/jheoe/index.

Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate.* San Francisco, CA: Jossey-Bass.

Bringle, R. G., Hatcher, J. A., & Holland, B. (2007). Conceptualizing civic engagement: Orchestrating change at a metropolitan university. *Metropolitan Universities, 18*(3), 57–74.

Campus Compact. (n.d.). Who we are. Retrieved July 22, 2012, from http://www.compact.org/about/history-mission-vision/

Carnegie Foundation for the Advancement of Teaching. (n.d.) Classification description: Community engagement elective classification. Retrieved July 15, 2012, from http://classifications.carnegiefoundation.org/descriptions/community_engagement.php

Driscoll, A. (2008, January/February). Carnegie's community-engagement classification: Intentions and insights. *Change, 39–41.*

Fitzgerald, H., Burack, C., & Seifer, S. (Eds.). (2010a). Handbook of engaged scholarship: Contemporary landscapes, future directions(Vol. 1). East Lansing, MI: Michigan State University Press.

Fitzgerald, H., Burack, C., & Seifer, S. (Eds.). (2010b). Handbook of engaged scholarship: Contemporary landscapes, future directions (Vol. 2). Community-campus partnerships. East Lansing, MI: Michigan State University Press.

Gelmon, S., Blanchard, L., Ryan, K., & Seifer, S. D. (2012). Building capacity for community-engaged scholarship: Evaluation of faculty development programs in the Faculty for the Engaged Campus initiative. *Journal of Higher Education Outreach and Engagement, 16*(1), 21–46.

Glassick, C. E., Huber, M. T., & Maeroff, G. I. (1997). *Scholarship assessed: Evaluation of the professoriate.* San Francisco, CA: Jossey-Bass.

Holland, B. (1997). Analyzing institutional commitment to service: A model of key institutional factors. *Michigan Journal of Community Service Learning, 4*(1), 30–41.

Kellogg Commission on the Future of State and Land-Grant Universities. (1999). *Returning to our roots: The engaged institution.* Washington, DC: National Association of State Universities and Land-Grant Colleges.

Kellogg Commission on the Future of State and Land-Grant Universities. (2000). *Renewing the covenant: Learning, discovery, and engagement in a new age and different world.* Washington, DC: National Association of State Universities and Land-Grant Colleges.

Sandmann, L., Saltmarsh, J., & O'Meara, K. (2008). Creating academic homes: An integrated model for advancing the scholarship of engagement. *Journal of Higher Education Outreach and Engagement, 12*(1), 47–63.

Seifer, S. D., Blanchard, L. W., Jordan, C., Gelmon, S., & McGinley, P. (2012). Faculty for the engaged campus: Advancing community-engaged careers in the academy. *Journal of Higher Education Outreach and Engagement, 16*(1), 5–20.

About the Authors

Robin Maria DeLugan is associate professor of anthropology at the University of California Merced. Heraresearch interests include nation-building and state formation; national identity and social memory; citizenship and civic engagement; and indigeneity. She received her Ph.D. in anthropology from the University of California, Berkeley.

Stergios Roussos is the interim executive director of the Blum Center for Developing Economies at UC Merced. His current work aims to understand and improve how organizations and community partnerships influence populations-level outcomes, especially outcomes disproportionately affecting vunerable and under-represented communities. He received his Ph.D. from University of Kansas and his M.P.H. from the Graduate School of Public Health at San Diego State University.

Geneva Skram holds a Master's degree in public administration from Califonia State University, Fresno. From 2011-2013 she served as community coordinator for the University of California-Merced Resource Center for Community Engaged Scholarship.

© *Journal of Higher Education Outreach and Engagement*, Volume 18, Number 1, p. 169, (2014)
 ISSN 1534-6104

Start Your Own Business Assignment in the Context of Experiential Entrepreneurship Education

Sandra E. Malach and Robert L. Malach

Abstract

Experiential education is often used in entrepreneurship courses, as it conveys both substantive, theoretical knowledge and intangible learning experiences best absorbed through active participation. Starting and operating a business is a unique, educational experience allowing students to apply the substantive knowledge gained in entrepreneurship and other business courses to a real business and to experience the intangible, real-world aspects of the entrepreneurial process. For these reasons, many entrepreneurship programs have incorporated a start your own business assignment. This essay explores experiential entrepreneurship education highlighting the Start Your Own Business Assignment in the context of the Principles of Entrepreneurship course offered to over 200 undergraduate students per year at the Haskayne School of Business, University of Calgary, Canada.

Introduction

Experiential education is utilized to create both tangible and tacit student learning experiences (*Kuratko, 2005; McCrea, 2010).* The course objective is to convey substantive knowledge centered on many of the traditional management disciplines in the context of new ventures and to convey the indescribable experiences that entrepreneurs encounter. The intent is to provide students with insight into pursuing an entrepreneurial future.

> Entrepreneurship instructors seem to view the practice of business in a different way from instructors of other types of business courses. The skills and knowledge necessary to understand issues regarding business entry seem to be different from the skills and knowledge necessary to understand the operation of an ongoing business entity. *(Gartner & Vesper, 1994, p. 182-183)*

Entrpreneurship education has been the subject of over 100 scholarly articles *(Bechard & Gregoire, 2005).* A study by Salomon, Duffy, and Tarabishy *(2002)* identified the implementation of a wide variety of experiential learning tools, including: business plans,

student business start-ups, consultation with practicing entrepreneurs; computer simulations, behavioral simulations, interviews with entrepreneurs; environmental scans; "live" cases, field trips and the use of video and films. This study was referred to by Kuratko *(2005)* in concluding that experiential entrepreneurship education was "widespread and diverse" *(p. 538).*

The Course: Principles of Entrepreneurship

Principles of Entreneurship is an undergraduate, introductory entrepreneurship course that has been offered for over 20 years at the University of Calgary, Canada. Currently, the course capacity is 220 students per year. Principles of Entreneurship is offered in four sections of 55 students each, during the fall term of each year, and fulfills degree requirements for students in the business school and in most other academic units as a senior option. The course is required for business school students who have elected to complete a concentration in entrepreneurship and innovation and for engineering students who have elected to enroll in the minor in entrepreneurship and enterprise development *(University of Calgary, 2013)*. Altogether, 1,287 students were enrolled in the years for which Start Your Own Business data is available (2004, 2005, 2007, 2009–2012). Enrollment by discipline (2010–2012) was 74% business; 15% arts; 5% engineering; 3% other (kinesiology, social work, nursing, education, and environmental design); and 2% science *(University of Calgary Registrar, personal communications, 2011, 2012, 2013)*. The low registration numbers from disciplines other than business likely reflect course registration priority for business students and course capacity resulting in limited access for students enrolled in disciplines outside the business school.

The Principles of Entrepreneurship course outline reflects two key pedagogical objectives: experiential learning and an understanding of the entrepreneurial process *(Baron, Shane, & Reuber, 2008).*

> Course Description: This course will provide an overview of the process of entrepreneurship focusing on the role of the entrepreneur in new venture development as well as the practical application of the processes involved in idea generation, opportunity identification and evaluation.
>
> Course Objectives: This course focuses on the entrepreneur's role in initiating and developing new ventures.

> Students will gain knowledge and insight into the characteristics of entrepreneurs and the development of new ventures through experiential assignments focused on entrepreneurial characteristics, opportunity identification, opportunity evaluation and small business operations. *(S.E. Malach, personal communication, September 10, 2012)*

Students are introduced to entrepreneurial experiential learning in the first class when they participate in an adaptation of the Bug Report activity *(Kim & Fish, 2009)* used to introduce one of the course themes of business opportunities as a real solution to a real problem. Teams of three-to-five students make lists of approximately 10 things from their work, life, university, hobbies, or observation that "bug" them. Each team then devises conceptual products or services to solve these problems. The team selects one problem and solution and a spokesperson delivers an elevator pitch to the class, which then provides feedback in the form of questions and comments. Examples of problems and solutions include a lack of campus parking and the creation of a valet parking service; the high cost of textbooks and a campus virtual used bookstore; and lines at popular restaurants and wait time indicator phone apps. The research on personality characteristics of entrepreneurs *(Hatch & Zweig, 2000)* is reinforced through the Bionic Entrepreneur activity, in which teams of two or three students use colored markers on transparency film to create a cartoon character entrepreneur. The students use the overhead projector to introduce their entrepreneur and its entrepreneurial characteristics to the class. For example, students may create the Dollar King cartoon character, who exhibits the entrepreneurial characteristics of creativity, decisiveness, risk-taking, control, insight, and passion. The Minefield Exercise *(Robinson, 1996)* is used to allow students to experience the importance of a strong entrepreneurial team. About 15 students try to make their way through the "minefield" by stepping on wooden blocks, avoiding the ground while crossing a field. Students gain an understanding of the necessity of working together to build strong teams as progressively more blocks are removed to increase the difficulty of crossing the minefield.

The course evaluation components balance the acquisition of substantive knowledge and understanding of the entrepreneurial experience. The acquisition of substantive knowledge is directly evaluated through the final examination (30%) of final grade. Experiential assignments addressing key elements in the entrepre-

neurial experience include class participation (10%), opportunity identification (15%), feasibility study (20%), and the Start Your Own Business Assignment (25%). Class participation is incorporated into the grading scheme to motivate students to engage in experiential activities. Points are awarded for participating in the experiential in-class exercises, completing a personal entrepreneurial profile, and fulfilling the feedback components of the opportunity identification and the feasibility study assignments. It is not surprising that entrepreneurship classes frequently include a class participation component (38% of entrepreneurship courses in the United Kingdom; *Levie, 1999)*. Many leading American universities include it as an evaluation component (see, for example, University of Michigan class IOE 422—Entrepreneurship, *University of Michigan, n.d.;* Wharton entrepreneurship classes MGMT 801, 802, 804, and 806, *Wharton School of the University of Pennsylvania, n.d.*; and *Oklahoma State University class EEE* 5263 Corporate Entrepreneurship, *Oklahoma State University, Spears School of Business, 2010).*

The individual experiential assignment is opportunity identification. In their landmark paper, Shane and Venkataraman *(2000)* concluded that opportunity identification was a critical and differentiating element that distinguished entrepreneurship from other business activities. Therefore, opportunity identification is a valid element of entrepreneurial education *(DeTienne & Chandler, 2004).* The individual opportunity identification assignment requires the students to identify five business concepts and to screen them utilizing a SWOT (strengths, weaknesses, opportunities, and threats) analysis to select the best idea. This idea is subjected to an abbreviated feasibility analysis, resulting in a five-page report. Students also post two promotional Powerpoint slides to the class web page. Class participation points are awarded to classmates who utilize an online system to vote for the best opportunities. The opportunities with the most votes are awarded a place in the mock Shark Tank, where students have the opportunity to pitch their idea to classmates who question and critique the business with the objective of determining whether it is worthy of a venture capital investment. The final team assignment is a comprehensive feasibility study with deliverables of a business fair presentation and an extensive written feasibility report. The business fair requires all team members to informally pitch the proposal to fellow students and to address their queries. This format requires that everyone on the team be familiar with the study in its entirety. All students in the class gain experience in asking and responding to business questions. Class

participation takes the form of students' individual written evaluations of three of their classmates' feasibility studies. The heart of the course, however, is the Start Your Own Business Assignment.

The Assignment: Start Your Own Business

Entrepreneurship instructors have developed many versions of the Start Your Own Business Assignment with the common activity of starting and operating a real business. Variables include: team size, amount of startup capital, planning time, operating time, prohibited and allowable business types, support for individual or team businesses, student selection process, participation by graduate or undergraduate students, and evaluation criteria. For example, Wilfred Laurier University offered a Start-a-Business Workshop course over one or two terms *(Menzies, 2009; Vincett & Farlow, 2008)*; in a course offered at Western Kentucky University, students produced and sold a music CD over 12 months *(Wharton, Parry, & Potter, 2003)*; and in an internet business course at Tiffin University, students select the products *(Daly, 2001)*. A summary sampling some of the courses offered at the graduate and undergraduate levels is provided in Table 1. A new venture start-up, however, can function as an assignment rather than an entire course. At the University of Calgary, the Start Your Own Business Assignment is included in an introductory course, and the business is operated for 7–10 days.

Table 1. Sample of Start Your Own Business Assignments

Row	Exercise Title	Postsecondary Institution	Graduate/ Undergraduate
1	Dollar Enterprises	University of Vermont	Both
2[1]	Starting a Real Business	Monmouth University	Both
3	Going Into Business	Monmouth University	Both
4	Lemonade Stand	Not stated	Both
5	Ice Cream Social	Not stated	Not Stated
6	Starting a Business	University of Texas at San Antonio	Both
7	The Challenge	Berea College	Undergraduate
8	The 90 Minute Business	Mount Royal College	Undergraduate
9	$10 Dollar Business	University of Alabama	Not Stated
10[2]	Start Your Own Business	University of Calgary	Undergraduate
11[3]	Business Plan	HEC Montreal	Graduate
12	Start-a-business Workshop	Wilfrid Laurier University	Undergraduate
13[4]	Music CD	Western Kentucky	Undergraduate
14[5]	Internet Business	Tiffin University	Undergraduate

Note. Rows 2-9 adapted from George Washington University Center for Entrepreneurial Excellence. Row 10 adapted from University of Calgart, 2013. Rows 11-13 adapted from Menzies, 2009. Row 14 adapted from Daly, 2001.

Students start and operate a business to obtain a real-life basis for understanding both the tangible and tacit challenges encountered in the entrepreneurial process. The University of Calgary's Start Your Own Business Assignment (detailed in Appendix A) has the following basic parameters:

- It is completed over a 3-week period, including a 7–10-day operating period.
- Students work in self-selected teams of approximately five students, who also work together on the other team assignments.
- The maximum start-up capital is $50 per team.
- Teams can operate any business except those that focus on alcohol; food not prepared in a commercial kitchen; gambling; and businesses that conflict with University of Calgary or Haskayne School of Business policies, or that in the instructor's opinion are inappropriate.
- Teams keep the profits. The team determines how any profits will be divided or whether a charitable donation will be made.

The assignment is graded out of 25 points and contributes 25% toward the student's final grade. Assignment components are weighted as follows: business proposal (5 points), presentation (15 points), and profitability ranking (5 points). The profitability ranking allocates grades, in descending order, according to the net profit before tax and the rank of the team in the lecture (11 teams). The assignment consists of five stages: (1) opportunity identification, (2) preoperational activities, (3) start-up, (4) operations, and (5) reporting. These stages were developed to correspond with the five elements in the entrepreneurial process identified by Baron *(2002)*: (1) recognition of an opportunity, (2) deciding to proceed and assembling the required resources, (3) launching a new venture, (4) building success, and (5) harvesting the rewards *(Baron et al., 2008)*. Experiential learning in itself is a process *(Kolb, 1984)*, and the assignment was designed to optimize the students' experiential learning through the incorporation of Kolb's learning cycle. The preoperational activities in Stages 1 and 2 of the assignment constitute the active experimentation phase, which includes planning and trying out what students have learned (opportunity identification and substantive business knowledge). Starting and operating the business (Stages 3 and 4) form the concrete experience phase. The preparation of the presentation, making the presentation, and responding to questions from classmates and the instructor (Stage 5) incorporate the reflective observation (reviewing/reflecting on the experience) and abstract conceptualization (concluding/learning from the experience) phases.

Teams have approximately 5 days after receipt of the assignment to identify a business opportunity. During the opportunity identification phase, teams are expected to apply the methods and information gleaned from lectures and readings on the topic of opportunity identification. The deliverable is a business proposal containing the following information: description of the business concept, complete description of products or services that will be sold, target market, location of events and points of sale, sales methods, advertising methods/locations, and team contact person. The preparation of a formal business plan is not essential for a business's success *(Honig, 2004; Vincett & Farlow, 2008)* and so was omitted from the assignment. In addition to focusing the students, this information enables the instructor to screen each business for its feasibility and compliance with local regulations and university policy. The proposals are also screened by the City of Calgary business licensing officer to ensure compliance with municipally administered legislation, primarily the Business License By-Law *(By-Law, 2008)* and the Food Handling Regulations (*Public Health Act, 2006)*. Internally, the proposals are screened and approved by the University's executive director of residence and ancillary services to ensure that no exclusive contractual supplier arrangements or university policies (e.g., alcohol policy, student code of conduct) are breached. The Risk Management Department conducts a review for risk and insurance policy compliance, student safety, potential third-party liability, and risk mitigation strategies. This approval process takes about 10 days.

After the businesses have been approved, the teams usually have a 2-day period to acquire resources and conduct preoperational activities. These activities typically include work scheduling and allocation, inventory acquisition, product assembly, and opening-day advertising and display preparation. The next phase is the opening day and operations. The operations phase lasts for 7–10 days, during which time classes are cancelled. During this phase, the teams must fulfill all of the tasks required to operate the business, including maintaining financial records. Teams cannot deviate from the approved proposal without the prior consent of the instructor. However, they often make changes to the specific location (e.g., building on campus), inventory mix, advertising methods, merchandising, sales methods, procurement, and inventory management. The instructor frequently visits the businesses to observe their operation and meet with the teams to discuss the operation and assist in solving problems to improve the business.

The reporting phase of the assignment consists of a class presentation and the submission of financial statements. The 10-minute class presentation includes description of the business; market and location; human resources; operations; finances (income statement); and commentary on the business's successes, failures, difficulties, solutions, and possible future improvements. Teams are instructed to tell the business's story and to answer the question, "What if we had to do it again next week?" Many teams increase the effectiveness of their presentation by bringing product samples and including pictures of the business and behind-the-scenes activities. The students describe how they identified the opportunity, how the resources were assembled, the marketing strategy, sales methods and what improvements and adjustments were made, reflections on whether the business is viable, and recommendations for improvement. The income statement must be submitted and accompanied by receipts for expenses and records of sales. The financial statement and supporting documentation are subject to the instructor's auditing power and utilized to finalize the team's standing in the class ranking. Inaccurate accounting is considered academic misconduct and is dealt with in accordance with the University's policy outlined in its calendar *(University of Calgary, 2013).*

The Results: Student Businesses

A total of 252 businesses were operated for the Start Your Own Business Assignment during the 8 years for which records were kept by the instructor: 2003 (18 businesses), 2004 (20), 2005 (18), 2007 (29), 2009 (42), 2010 (42), 2011 (42), and 2012 (41). The 240 profitable businesses operated by the students generated a total profit of $133,491.28. The most profitable year was 2010, when 42 profitable businesses generated a profit of $25,753.76.

For all years the cumulative profit (including losses) was $133,290.21. The profitability range was broad at $5,826.40, with the highest individual business profit being $5,774 and the lowest a loss of $52. The mean profit was $529.73 with a standard deviation of $256.42 and an average deviation of $414.10. The quartile results were: $–52 to $164.10 (Q1), $342.50 (Q2), $683.81 (Q3), and $5,775.50 (Q4).

The businesses were classified into product and service categories. More discreet coding such as NAICS or SIC was discounted as almost all of the businesses fell into two categories: 92 businesses were classified as personal services and 160 as retail (products). For the service businesses the mean profit was $360.41 with a standard

deviation of $620.81 and an average deviation of $443.33. The range was $3,752.35 with the most successful service business generating $3,705.08 in profit and the least successful resulting in a loss of $47.27. For product businesses the mean profit was $511.59 with a standard deviation of $609.99 and an average deviation of $367.39. The range was $5,826.40 with the most successful service business generating $5,774.40 in profit and the least successful resulting in a loss of $52.

Overall, the vast majority of the student businesses were profitable, giving the students the experience of what it takes to be a successful entrepreneur, if only for a short time. The practical impact of dollars and cents profits or losses for student efforts is a very effective counterpoint to points earned by doing theoretical in-class exercises.

Reflections, Recommendations, and Conclusions

It is difficult to ascertain whether using experiential learning exercises to teach entrepreneurship is an educational success relative to purely theoretical coursework. The objective of an experiential course is to provide both a tangible and a tacit learning experience that is directly transferrable to future entrepreneurial activity. Furthermore, an individual's learning experience and its perceived value may deviate from that of the class experience in its entirety.

A review of the student course evaluations provides us with an indication of this experiential course's perceived value. The course evaluation is a uniform, campuswide survey that is completed anonymously, either online or in class, during the last 2 weeks of the academic term. The survey consists of 12 statements that offer responses on a 7-point scale (from 1 = *strongly disagree* to 7 = *strongly agree*). The relevant statement is, I learned a lot in this course. The average student response was *agree* (5.99/7, SD 0.41). This exceeds the average for courses offered by the business faculty (*M* =5.82, *SD* 1.38; *University of Calgary Registrar, personal communication, 2007, 2009-2012)*. From this perspective, the course appears to provide the students with a valuable learning experience.

Reflections

Fifteen years of utilizing the Start Your Own Business Assignment has given Sandra Malach the opportunity to gather and synthesize a multitude of anecdotal comments conveyed from multiple perspectives. This has resulted in the formation of

some lasting impressions and conclusions about the assignment's effectiveness as a primary experiential learning tool. The most important perspective is that of the students, but it is also worthwhile to consider the effect on the university community and the community at large. Over time Sandra has learned many lessons regarding both teaching and its impact on students. Therefore, it is important to reflect on the experience from multiple perspectives.

Student experience. Student teams are required to make a presentation reflecting on their businesses' successes, failures, solutions, and potential improvements. These thoughtful reflections help team members focus on both the tacit and tangible lessons learned. Others are also able to learn from listening to their classmates' presentations. After all the presentations have been completed, the class usually reaches some conclusions about their successes and weaknesses. They often conclude that the most successful businesses are those in which the entire team is passionate about the business and works effectively. However, many teams encounter and overcome difficulties regarding individuals' schedules and availability as well as the fit between their personal skills and the demands of the business.

The first barrier that some teams encounter is regulatory. Regulators may reject or require changes to the business model to ensure compliance with policies and regulations. Students then must quickly adapt the business concept in order to obtain approval to operate. Students also may realize that some businesses are not good opportunities when the market does not perceive the need for their product or service. Sometimes these businesses fail, but sometimes changes are made to the product or service mix or to the market. During operations, challenges arise with regard to inventory supply and timely delivery. Cash flow constraints may be a factor. Alternative suppliers or delivery methods are often implemented. Teams who deliver services are challenged to discover the most efficient way of scheduling and working together.

Students often acknowledge that the business is viable only for a short term and acknowledge that it would not likely be successful as an ongoing venture. This occurs primarily because many businesses are of a "pop-up" nature that reflects seasonal opportunities, such as fall leaf raking or Christmas light installation. On occasion, students continue their operations, even transforming them intoto permanent businesses. This transition often requires changing suppliers from low-cost retailers to true wholesalers or selling to different markets.

It is fair to say that the Start Your Own Business Assignment is one that students do not forget. Alumni consistently introduce themselves to Sandra in the context of their businesses and their unique experiences. These experiences are often challenges that were overcome or incredible successes. In most cases, students found that the experience of identifying and creating real businesses allowed them to more effectively see how their business education could be applied to real business operations and to better understand their personal ability or desire to start a new venture.

Community. The assignment necessarily results in unique community interactions both within the university and in the community at large. On campus, students raise the profile of the course with their peers resulting in subsequent enrollment by those who have talked to the student entrepreneurs. University administrators facilitate the businesses by providing tables and space on campus as well as through an approval process to ensure that the products and services do not contravene policies (e.g., alcohol policy), exclusive contractual obligations (e.g., food suppliers), or insurance parameters. This gives the students practical experience in conducting business in a regulated environment.

Interactions with the community at large result primarily through sales activities. Students consistently report that a successful sales pitch usually includes identifying themselves as university students completing a business assignment. Members of the local business community also provide space, as well as access to their employees or email system for advertising. Businesses view this as positive community involvement. For example, a local farmers market regularly provides students with free sales booths, and the merchants assist the students in developing effective sales techniques. These interactive experiences are valuable in strengthening the bond between the university and our business community.

Instructor. As the instructor of this course for the past 15 years, I find experiential learning fulfilling for both myself and my students. It is rewarding to see students apply the theoretical concepts they have learned in this and other courses to real-world business problems. I enjoy celebrating their successes and facilitating the learning that results from the inception and operation of these micro businesses in a real but relatively safe environment.

Team interpersonal problems are the most difficult to rectify but are most often overcome through a meeting that often results in improvements to team communication and organization. In rare

instances, a student's interpersonal difficulties defy resolution and an alternative individual assignment is required. However, most teams agree that the assignment reinforces the importance of interpersonal and team-building skills.

It is worthwhile to consider the comments of former students. Many have specifically related how the course has affected their perspectives on business and their personal goals. Some have started new ventures; others report that they no longer view business issues in isolation; many report increased confidence; some hope to realize an entrepreneurial vision, and others have confirmed that they will happily be employees. Most of our conversations indicate a connection between the Start Your Own Business Assignment experience and their resultant perspectives.

Recommendations for Implementation

Entrepreneurship instructors contemplating the inclusion of a start your own business assignment should consider the benefits of experiential education in the context of the potentially daunting operational challenges when planning their course. The following suggestions are important for creating a positive teaching and learning experience.

1. Do not hesitate to include this assignment in your course. Only by doing so will you see how this assignment fuels your students' enthusiasm for business and illustrates to them the practical applications of business theory.

2. Consult your university administrators and licensing officials early in the planning stages to ascertain the feasibility of the assignment or any consequent operating constraints.

3. Carefully plan your course outline, giving ample time for business planning, approval, operations, and reporting. Review the outline with students and administrators while emphasizing the importance of sticking to the timeline.

4. When scheduling, try to avoid conflicts between the start your business assignment and midterm exams or other demanding times during the term.

5. Clearly communicate the expectations for the deliverables and business operations to the students, and be

available for continuous communication to facilitate changes to operations.

6. The larger the class size, the more complex the coordination, supervision, and approval tasks become, so carefully consider your capacity with respect to the available resources. Administrative support is invaluable.
7. The assignment is intensive, so the instructor must be well organized.
8. Be prepared: It is a lot of (rewarding) work in a short time.
9. The instructor must have a high tolerance for ambiguity to allow the students to pursue their evolving entrepreneurial plans with minimal interference.
10. Take the time to celebrate business successes and to capture the lessons learned from failed challenges.

Conclusions

Students from across the university enroll in Principles of Entrepreneurship to fulfill the requirements for a minor in either business or engineering or as a stand-alone option The course's tangible lessons on business from an entrepreneurial perspective and the experiential lessons relating to entrepreneurial aptitudes and perspectives culminate in the Start Your Own Business Assignment. This assignment provides students with insight into the many facets of entrepreneurship. In particular, working through the entrepreneurial process requires the students to rely on their existing business knowledge while assuming the role of an entrepreneur. The course evaluations, group presentations, and student conversations with the instructor all indicate that the students derive benefit from the experiential learning in the Start Your Own Business Assignment. Therefore, entrepreneurship instructors are encouraged to include this form of experiential learning in their courses.

The scope of this essay is limited to one long-standing, high-enrollment course viewed in the context of the current experiential entrepreneurship education literature. Additional research questions remain. Is there an optimal start your own business assignment? How much do the various assignments of this type have in common? What are the variations from educational,

operational, and administrative perspectives? How valuable is the assignment from the student's perspective? Does the start your own business assignment influence former students' decisions to launch an entrepreneurial venture? Researching these and other questions will aid us in our quest to provide the optimal educational experience for future entrepreneurs.

References

Baron, R. A. (2002). OB and entrepreneurship: The reciprocal benefits of closer conceptual links. *Research in Organizational Behavior, 24*, 225–269.

Baron, R. A., Shane, S. A., & Reuber, R. A. (2008). *Entrepreneurship: A process perspective* (1st Canadian ed.). Toronto, Canada: Nelson Education Ltd.

Bechard, J. P., & Gregoire, D. (2005). Entrepreneurship education research revisited: The case of higher education. *Academy of Management Learning & Education, 4*(1), 22–43.

By-Law of the City of Calgary to license and regulate businesses, Bylaw Number 32M98. (2008). Retrieved from City of Calgary website: http://www.calgary.ca/CA/city-clerks/Documents/Legislative-services/Bylaws/32M98-BusinessLicence.pdf?noredirect=1

Daly, S. P. (2001). Student-operated internet businesses: True experiential learning in entrepreneurship and retail management. *Journal of Marketing Education, 23*(3), 204–215.

DeTienne, D. R., & Chandler, G. N. (2004). Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical test. *Academy of Management Learning & Education, 3(*3), 242–257.

Gartner, W. B., & Vesper, K. H. (1994). Experiments in entrepreneurship education: Successes and failures. *Journal of Business Venturing, 9*(3), 179–187.

George Washington University Center for Entrepreneurial Excellence. (2013, April 3). 3e Learning Ideas. Retrieved from http://3e-learning.org/about.asp

Hatch, J. A., & Zweig, J. (2000). Entrepreneurs: What is the stuff of an entrepreneur? *Ivey Business Journal, 65*, 68–72.

Honig, B. (2004). A contingency model of business planning. *Academy of Management Learning & Education, 3*(3), 258–273.

Kim, J. H., & Fish, L. A. (2009). "Bug reports" and "Too cools": Experiential entrepreneurship exercises to develop students' creative, innovative, and technological abilities. *Business Education Innovation Journal, 1*(2), 13.

Kolb, D. A. (1984). *Experiential learning: Experience as a source of learning and development.* Englewood Cliffs, NJ: Prentice Hall.

Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends and challenges. *Entrepreneurship, Theory and Practice, 29*(5), 577–598.

Levie, J. (1999). *Entrepreneurship education in higher education in England.* London, England: London Business School.

McCrea, E. A. (2010). Integrating service learning into an introduction to entrepreneurship course. *Journal of Management Education, 34*, 39–61.

Menzies, T. V. (2009). *Entrepreneurship and the Canadian universities: Report of a national study of entrepreneurship education*. St. Catherines, Canada: Brock University.

Oklahoma State University, Spears School of Business, School of Entrepreneurship. (2010). EEE 5263 Corporate Entrepreneurship [Course outline]. Retrieved from http://entrepreneurship.okstate.edu/files/eee5263.pdf

Public Health Act, Food Regulation. (2006). Alberta Regulation 31/2006. Retrieved from Calgary Health Region website: http://www.calgaryhealthregion.ca/publichealth/envhealth/pdf/legislation/Food_Reg.pdf

Robinson, P. B. (1996). The minefield exercise: "The Challenge" in entrepreneurship education. *Simulation & Gaming, 27,* 350–364.

Salomon, G. D., Duffy, S., & Tarabishy, A. (2002). The state of entrepreneurship education in the United States: A nationwide survey and analysis. *International Journal of Entrepreneurship Education, 1*(1), 65-86.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *The Academy of Management Review, 25(*1), 217–226.

University of Calgary. (2013). University of Calgary calendar 2012–2013. Retrieved from University of Calgary website: http://www.ucalgary.ca/pubs/calendar/current/ha-4-1-3-1.html

University of Michigan, Center for Entrepreneurship—Academics. (n.d.). IOE 422—Entrepreneurship [Course outline]. Retrieved March 29, 2013, from University of Michigan Engineering website: http://cfe.umich.edu/courses

Vincett, P., & Farlow, S. (2008). Start-a-business: An experiment in education through entrepreneurship. *Journal of Small Business and Enterprise Development, 15*(2), 274–288.

Wharton School of the University of Pennsylvania, Entrepreneurial Management. (n.d.). Courses offered by the Goergen Entrepreneurial Management Program [course outline for MGMT 801, 802, 804, and 806]. Retrieved from Wharton School, University of Pennsylvania website:https://mgmt.wharton.upenn.edu/programs/mba/program-information/entrepreneurial-management/

Wharton, R., Parry, L., & Potter, P. (2003, January). *Does entrepreneurship education make a difference? Changing students' orientations towards risk, ambiguity and control*. Paper presented at the United States Association of Small Business and Entrepreneurship Annual Meeting, Hilton Head Island, South Carolina.

About the Authors

Sandra Malach has been a faculty member in the entrepreneurship and innovation area at the Haskayne School of Business since 1994. She has taught undergraduate entrepreneurship classes for over 15 years. Her current research interests are entrepreneurship education and law and entrepreneurship. She holds a J.D. from the University of Calgary and a LLM from Osgoode Hall at York University.

Robert Malach is an instructor in the business and environment area at Haskayne School of Business. He holds a bachelor of science (freshwater ecosystems) from the University of Saskatchewan, a diploma in education, a J. D. from the University of Calgary, and a master of laws (e-business) from Osgoode Hall at York University.

APPENDIX A

Start Your Own Business Team Assignment

TOTAL WEIGHT 25%

PART A (5%) BUSINESS PROPOSAL

Teams must submit a Business Proposal to the Instructor by the date specified on the Lecture Schedule. The Assignment must be submitted to the Digital Drop Box on Blackboard or to the ENTI Area Secretary by the date & time specified in the course outline. The Business Proposal shall at least contain the following:

- Team Members' Names, Course No. & Lecture No.;
- Team Contact who will be available during the review period;
- Business Type;
- Complete description of products or services;
- Market;
- Location of events and points of sale. Note, selling will only be allowed in these locations;
- Sales methods; and
- Advertising methods

NOTE: Proposals that include a business concept focusing on: alcohol, food, charity, gambling, or that conflict with university/ Haskayne policies or that in the instructor's sole opinion are not appropriate will not be approved. Students are advised that the proposals may be reviewed by the city of Calgary and the University of Calgary to insure compliance. All decisions to reject a proposal are final [2010 amendment]. Where a project is not approved students must prepare an alternative business proposal for approval prior to commencing operations. In that case the alternative proposal will be graded & approved as expeditiously as possible.

PART B (15%) PRESENTATION & FINANCIAL DATA

1. Teams will operate the business for the period of time stipulated in the Lecture Schedule. Maximum start-up capital is $50/team.
2. At the end of the operating period teams shall make a 10 minute class presentation including the following:

- Description of the Business;

- Market and Location;
- Human Resources;
- Operations and
- Finances (Revenues – Expenses)

3. Each team must include the following financial data for the purposes of evaluating profitability (Part C). Students should note that the financial statements and any other representations are subject to the instructor's audit at her discretion and any inaccuracies or false information is academic misconduct. If you have questions please contact the Instructor. Each team must submit:

- Income Statement detailing sources of revenue and expenses resulting in net profit. Receipts for the purchase of any supplies or inventory;
- Receipts issued to customers (for larger sales) or record of daily cash (for multiple, small sales);
- The financial statements and any other representations are subject to the instructor's audit at her discretion.

4. Students must conduct their businesses in accordance with the guidelines set up for this assignment and conditions imposed by the instructor. Ethical behaviour and honesty are expected in the conduct of the business and in the presentation. Inappropriate or unethical behaviour in the conduct of the business will be penalized at the Instructor's discretion.

PART C (5%) PROFITABILITY

1. This portion of the grade will be based on profitability of the team's venture.

   a. Net Profitability from earned revenue (for products/services completed) and expenses incurred (all expenses, including charitable donations, for operating the business).

2. The grades for this portion will be allocated on the following basis, however the instructor reserves the right to deviate from the following system should student participation warrant a lower or higher grade.

© *Journal of Higher Education Outreach and Engagement*, Volume 18, Number 1, p. 187, (2014)
 ISSN 1534-6104

A University Engagement Model for Achieving Technology Adoption and Performance Improvement Impacts in Healthcare, Manufacturing, and Government

David R. McKinnis, Mary Anne Sloan, L. David Snow, and Suresh V. Garimella

Abstract

The Purdue Technical Assistance Program (TAP) offers a model of university engagement and service that is achieving technology adoption and performance improvement impacts in healthcare, manufacturing, government, and other sectors. The TAP model focuses on understanding and meeting the changing and challenging needs of those served, always seeking to engage a mix of faculty, staff, students, and others that best meet these needs. Although the TAP mission is focused on the needs of those served, participating faculty and students have experienced significant benefits, and faculty rarely decline an opportunity to participate. This essay presents the evolution of Purdue University's engagement and service missions and their alignment with the current thinking of engagement scholars and practitioners. The operational model for TAP is described as an important part of Purdue's engagement mission, along with the elements necessary for its success, examples of successful engagement, and future challenges and opportunities.

Introduction

Purdue University, founded in 1869, is a land-grant institution with a long-standing heritage of engagement, outreach, and service. Service to its constituents through mutually beneficial programs and activities has been integral to Purdue's mission throughout its history. Purdue Extension was established in 1914, and the Colleges of Consumer and Family Sciences and Veterinary Medicine have had strong service initiatives in place for decades. Statewide Technology (offering degree and certificate programs in 10 locations) began offerings in 1984; the School of Nursing opened its first community clinic in 1981; and several additional initiatives have been established in recent years, including the Technical Assistance Program (TAP).

In the year 2000, a member of the Kellogg Commission on the Future of State and Land-Grant Universities assumed Purdue's presidency, and the university fully embraced the imperatives of its

new president and the Commission to become an engaged institution *(Jischke, 1998; Kellogg, 1999)*. In 2001, Purdue's Board of Trustees adopted a strategic plan emphasizing learning, discovery, and engagement, and identified "a vital role for Purdue University in strengthening Indiana's economy and improving the qualifications of the state's workforce" *(Akridge et al., 2010, p. 141)*. Engagement and service have been core missions for Purdue's Colleges of Agriculture, Consumer and Family Sciences, and Veterinary Medicine for decades, and since 2001 they have increasingly become part of the fabric of the entire campus. An Office of Engagement was created to support campus and statewide service, an engagement council was formed, and TAP and other key initiatives in the office were placed under the leadership of associate vice provosts for engagement (now assistant vice presidents for engagement).

In recent years, university engagement scholars and practitioners have presented well-founded arguments appealing for more effective and impact-focused methodologies and initiatives to meet societal needs. These leaders have called for universities to be more accessible to business and industrial sectors that seek partners, consultants, research services, or other assistance *(Role of Engaged Universities, 2008)*. Aligning efforts with the priorities of local communities *(Creighton, Sweeney, & Cauley, 2010)*, and implementing recognized programs to establish partnerships with practitioners that quickly translated research results into practice *(Witz, 2007)*, were emphasized. Fitzgerald and Simon *(2012)* recently advanced the concept of a world-grant university that encouraged engagement with society as a partner in solving complex challenges. University strategies that support innovation and entrepreneurship were recommended by Audretsch and Phillips *(2007),* and Fitzgerald, Bruns, Sonka, Furco, & Swanson *(2012)* proposed that a new framework for engagement must move away from emphasizing scholarly outcomes and move toward emphasizing impact. Beckman, Penney, and Cockburn *(2011)* asserted that successful impacts require clear goals, evaluations, and broad participation. The major ongoing transformation in higher education renders universities indispensable for economic and community engagement, according to Trani and Holsworth *(2010)*, who noted that requests for university engagement are rapidly multiplying, involving universities in an ever increasing range of community and economic development relationships.

This consensus in the literature closely matches the experiences and outlook of the TAP and its initiatives to achieve technology

adoption and performance improvement impacts across a diverse spectrum of stakeholders.

Evolution of TAP's Engagement and Service

The recession of the early 1980s had a major negative impact on jobs in Indiana's largest economic sector at the time, manufacturing. Statewide strategic plans recommended many new initiatives, including state funding for Purdue University to provide business assistance. The Technical Assistance Program was established in January 1986 with a focus on supporting technology adoption and performance improvement in the manufacturing sector. The College of Engineering established and managed the program. Under the directorship of a senior engineering faculty member, a team of faculty and graduate students was engaged to perform short-term, no-cost assistance projects to address a broad range of technology and performance issues and opportunities. Impacts and outcomes of these short engagements were measured and found to be very positive. In the late 1980s, TAP added a fee-based information service that provided access to thousands of technical documents each year. The combination of direct assistance and information services was well received through the late 1990s when the Internet began to replace the need for fee-based information services.

By the time Purdue implemented a strategic plan that substantially expanded engagement and service efforts throughout the university in 2001, TAP was involving faculty and graduate students from several colleges and was moved to the newly formed Office of Engagement in 2002. In 2005 under the leadership of a new state administration, Purdue was asked to integrate Indiana's Manufacturing Extension Partnership (MEP) center (previously managed by a state agency) with the TAP. MEP is a federal manufacturing competitiveness initiative established in 1990 by the National Institute for Standards and Technology, and each center carries out its mission with federal, state, and fee-based funding. The integration of Indiana's center with TAP has enabled the manufacturing sector to engage a broad range of Purdue expertise. Also in 2005 the Indiana Hospital Association requested access to teams of engineering and clinical faculty that could address performance improvement projects. The association provided start-up funds that TAP used to establish a healthcare initiative that now serves hundreds of providers. In subsequent years several additional TAP expansions occurred, some at the initiative of Purdue, but most at the initiative of those served. TAP's current mission, scope of

services, funding, involvement of Purdue personnel, number of partnerships, organizations served, and impacts have grown to approximately seven times those of 2000.

The mission of the Purdue Technical Assistance Program is to advance economic prosperity, health, and quality of life in Indiana and beyond. TAP provides a broad range of technology adoption, technical assistance, performance improvement, and education programs that engage nearly 200 faculty members, students, and full-time staff with over 800 organizations each year. Organizations served include manufacturers, businesses, hospitals, health departments, physician practices, governmental units, schools, universities, not-for-profits, and new business start-ups. Impacts are considerable: Since program establishment in 1986, TAP initiatives have served over 12,000 organizations, trained over 26,000 employees, boosted or retained sales by $872 million, increased investments by $217 million, contributed to cost savings of $107 million, and created or retained over 11,000 jobs in the state. (Most of these data were obtained by a third-party survey firm under contract with the National Institute for Standards and Technology).

Funding awards in the fiscal year ending June 30, 2012, totaled $11.3 million from 227 sources, including federal agencies (56% of total), fees for service from the manufacturing and healthcare sectors (22%), state funding for business assistance (18%); and foundations, university partners, local economic development organizations, and others (4%). Figure 1 illustrates the number of organizations served by county and the contributions of various funding sources.

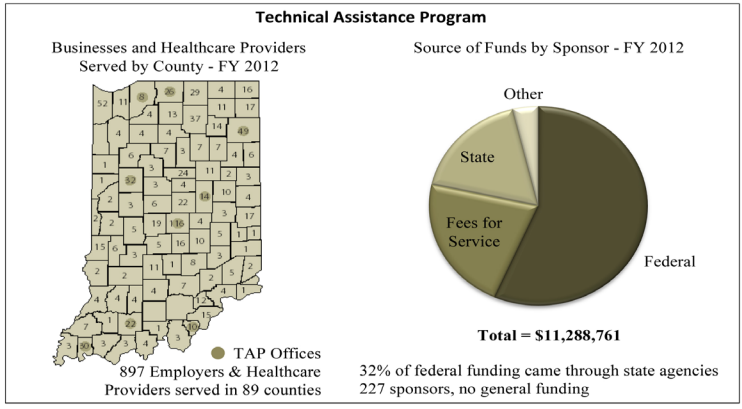

Figure 1. Business and healthcare providers served by TAP by county, and source of TAP sponsorship funds for fiscal year 2012.

TAP continuously updates its organizational structure to accommodate the requirements of those served and the outcomes expected by the sponsors. The current organization includes several groups and units, listed along with the year they were established. The following groups serve business, industry, and governmental units:

- TAP unit (1986): Short-term assistance projects that bring faculty and graduate student resources to bear on a broad range of business and technical issues. With funding from the State of Indiana, up to 5 days of no-cost assistance is provided to qualifying organizations. Those served include new company start-ups, existing businesses, not-for-profit organizations, and governmental units.
- Manufacturing Extension Partnership center (2005): A cooperative agreement with the National Institute of Standards and Technology's (MEP). The agreement is contracted to Purdue through the Indiana Economic Development Corporation. MEP provides comprehensive services to over 400 manufacturers per year to advance innovation and global competitiveness. MEP also facilitates connections with Purdue for many companies to assist in recruitment of students for internships and full-time positions, research, and degree and certificate programs. Although the primary focus of MEP is manufacturing, other sectors that take advantage of its performance improvement services include banking, government, workforce development organizations, and Purdue University.
- Energy Efficiency & Sustainability unit (2006): Helps companies and other organizations improve processes and develop energy management practices through workshops, on-site training, awareness events, implementation, and consulting services.
- Green Enterprise Development unit (2008): Helps companies optimize material and energy resources during the design, manufacture, and end use of products in order to reduce production costs, eliminate negative environmental impacts, and increase business opportunities.

- Advanced Modeling and Simulation group (2011): A team of selected engineering faculty and graduate students who are assisting manufacturers with the adoption of advanced product and process modeling technologies. This work is performed through membership in the National Digital Engineering and Manufacturing Consortium.
- Purdue Healthcare Advisors (formerly the TAP health care group) provides a number of services for the healthcare sector:
- Lean Healthcare unit (2005): Applies lean methodology, six sigma tools, consulting projects, simulation and modeling, and many other performance improvement practices to hospitals and other healthcare providers to improve patient care, quality, safety, and productivity.
- Community Health unit (2006): Addresses critical issues facing public and population health through performance and quality improvement methodologies for workforce training and resource management.
- Purdue Regional Extension Center (2010): This cooperative agreement with the Department of Health and Human Services assists providers with the adoption and meaningful use of electronic health records to improve patient care.

Key Factors Supporting TAP's Engagement Model

The success of TAP engagement derives from many factors. In some cases only a few of these factors are relevant to a partnership; in other cases several factors must align to develop an engagement. We describe here a number of elements that are critical to TAP's success.

1. **Partnership with a major land-grant research institution.** A broad range of healthcare, manufacturing, and governmental clients cite several factors that position Purdue as a preferred partner. First, the service mission of TAP directly supports the innovation, performance improvement, and competitiveness needs of the business sector. In addition, TAP's service mission for healthcare is closely aligned with the patient care,

quality, safety, and productivity missions of this largely not-for-profit sector. Second, several partnerships, such as cooperative agreements and other federal and state initiatives, require broad expertise and substantial capacity to manage large, multiyear engagements and serve large regions, often encompassing the entire state. Third, many constituencies repeatedly engage TAP based on a strong history of responsiveness and commitment to quality. Finally, several clients are attracted to the value of TAP engagements that are characterized by low costs and yet provide a broad range of capabilities and subject matter expertise through the university's faculty.

2. **Needs and opportunities identification.** TAP employs many mechanisms to keep abreast of evolving societal needs and opportunities for service. For example, the TAP leadership staff is well connected with senior Purdue faculty, staff, and administrators who are active participants in economic development organizations, professional societies, and business and healthcare associations. TAP personnel participate in community planning events, trade shows, conferences, planning groups, and economic strategic planning; they are members of boards and councils of several economic development and healthcare organizations. TAP receives valuable input from an active 20-member advisory council that meets twice annually for a full day; TAP similarly receives input from partnerships with several healthcare organizations. In many cases the healthcare, manufacturing, and government sectors take the initiative to approach TAP with specific needs and opportunities to partner. This broad-based input, combined with careful monitoring of grant opportunities and various studies and reports, as well as initiatives of federal, state, and local organizations, has supported TAP's development of effective partnerships that address societal needs.

3. **Service-oriented focus.** TAP carefully works not only to gain a thorough understanding of the expressed needs of its clients, but also to discern the unexpressed opportunities to engage with those served. Once expressed needs are fully understood, TAP initiatives

are designed and managed to engage the most effective mix of faculty, students, staff, and others that will meet the objectives. Senior capstone projects, experiential learning, and other important faculty and student experiences in support of the education mission of the university are often leveraged, but the TAP-managed initiatives are solely client-focused and are not constrained by academic objectives. Even so, the approximately 90 participating faculty and students consistently report positive impacts on their teaching and research from their experience with businesses and healthcare providers, and the graduating students report positive impacts in terms of job offers. These results are consistent with studies of the impact of engagement on faculty and students *(Beckman et al., 2011; McKinnis, McNamara, Kuczek, & Salvendy, 2001; Nicotera, Cutforth, Fretz, & Thompson, 2011).* TAP also draws on its knowledge of the latest research and best practice technologies and methodologies and offers potential partners many levels of engagement, from incremental improvements to transformational change and technology adoption. This knowledge of "what can be" is derived from the research developments of the faculty at Purdue and elsewhere, the literature, conferences, and other sources. For example, faculty research at Purdue on developing advanced computational fluid dynamics modeling capability is being applied to the design of more efficient vacuum pumps and enhanced vascular medical devices through TAP's participation in the National Digital Engineering and Manufacturing Consortium. In another example, simulation modeling and prediction capabilities developed by a Purdue research group based on complex inputs are being applied to the prediction of early readmissions and the development of intervention strategies in a major initiative involving 120 hospitals. Research papers providing a basis for these two adoptions of technology include Delorme et al. *(2012)* and Konrad et al. *(2007).*

4. **Development of client-focused partnership agreements.** Purdue has a broad vision for engagement: to serve society with "profound scientific, technological, social, and humanitarian impact that advances societal

prosperity and quality of life" *(Purdue University, 2008, p. 7)*. Many creative partnerships have been developed in light of this vision. Partners frequently present TAP with agreement conditions and components that are not typical of federal and private-sector agreements commonly used at universities. In keeping with Purdue's engagement vision, creative new mechanisms have been developed by Purdue's contracting and business personnel to accommodate these unconventional terms. Examples of TAP's many forms of partnership are listed below.

- Large federal cooperative agreements: Examples of such agreements include those with the Workforce Innovation in Regional Economic Development (WIRED) initiative of the Department of Labor, the Manufacturing Extension Partnership (MEP) of the National Institute of Standards and Technology, and the Healthcare Information Technology Regional Extension Center (HITEC REC) initiative of the Department of Health and Human Services. These agreements have greatly expanded the scope of TAP's operations by leveraging large federal investments; they have also helped grow its capacity and expertise. Purdue's accommodations for these agreements have included authorizations to supply a required endorsement of carefully selected software providers, to meet a requirement to identify and name start-up staff, and to invoice for payment based on meeting specified milestones.
- Fees for service: These partnerships are initiated by both TAP and its clients. The work performed includes training, performance improvement, technology adoption, consulting, problem solving, and several other tasks. TAP has a strong reputation for quality and value, and many of these engagements are executed without competitive bidding. In these partnerships, Purdue has permitted TAP to invoice upon completion of service, as is done in the private sector and as is expected and requested by those served.
- State agency partnerships: TAP has supported the initiatives of several state agencies, including the Indiana State Department of Health, the

Department of Workforce Development, the Office of Energy Development, the Indiana Department of Environmental Management, the Indiana Department of Transportation, and the Indiana Economic Development Corporation. These partnerships have been initiated by both the agencies and TAP, and in some cases have become long-term relationships. For most of these partnerships, Purdue enables TAP to provide services on a fixed-price basis (payment for deliverables) instead of a cost-recovery basis. This arrangement is well received by the state agencies that seek simplified invoicing and a focus on deliverables.

- Healthcare association partnerships: TAP has ongoing partnerships with the Indiana Hospital Association and the Indiana Rural Health Association, and has smaller partnerships with several other associations. Funding sources include hospitals, federal grants, and community and foundation grants.
- State funding for business assistance: Since 1986 the State of Indiana has funded business assistance through TAP. Most of this assistance is provided at no cost through carefully managed, faculty-based consulting projects on a broad range of technology, business, human resources, and performance improvement topics. Companies must meet certain qualifications to receive assistance, and in many cases these projects lead to other Purdue and TAP engagements.
- Community partnerships: TAP has partnered with community economic development organizations, community foundations, and local universities to provide service to manufacturers and hospitals. These partnerships have been formed by mutual agreement and are funded by multiple sources.

5. **Evidence-based evaluation and assessment of performance.** Performance excellence is an essential feature of all TAP initiatives. Each engagement of one day or more includes a signed written statement of objectives, deliverables, and expected outcomes and impacts. TAP utilizes a quality system that includes several mechanisms to collect evaluation data on subjective and objective measures of performance. For

extended engagements, subjective feedback may be obtained daily or weekly. The evaluation data serves several purposes. First, it is used by TAP project managers to ensure that the outcomes of each project, initiative, or assignment are meeting client expectations. In rare cases of performance issues, the evaluation data and subjective feedback are used to support immediate resolution. Second, the evaluation data are used by the faculty, student, and staff participants to monitor and improve their effectiveness. Third, the feedback information, outcome, and impact data are included (with appropriate permissions) in reports required by certain sponsors (for example, large cooperative agreements) and are used in summary reports and annual reports that support ongoing and new partnership initiatives.

6. **University support.** TAP receives broad-based acceptance and support from the university. Purdue's commitment to service and engagement is outcomes- and impact-based. TAP's initiatives yield many economic impacts, measures of success, and anecdotal examples that are well received by senior administrators, deans, and heads who seek faculty participation in such initiatives. The university strongly endorses TAP's funding model, which includes over 200 sponsors from a broad range of sectors. No general funds are provided; instead, TAP returns significant facilities and administration (overhead) funds to the university. Thus in a budgetary sense, TAP is revenue-neutral to the university, as well as defraying the costs for human resources, contracts, business office, and other services provided to TAP. Finally, TAP is housed within the Office of Engagement under the leadership of a senior faculty member with a full understanding of the value and importance of Purdue's engagement mission.

Operationally, Purdue supports and enables TAP in many ways, a few of which are listed here:

- Broad endorsement by the university: The president provides a letter of endorsement in TAP annual reports; the Purdue Alumni Association features TAP achievements in its Alumnus Magazine; Purdue Marketing and Media develops TAP publications and

issues numerous media releases; Purdue governmental relations strongly promotes new state and federal partnerships; and TAP initiative and success stories are included in many Purdue speeches, reports, and websites.

- Facilitation of faculty participation: TAP is authorized to compensate faculty through overload payments, partial appointments, and support of graduate students. In some cases faculty are engaged for work requiring responses in a day or two. Faculty members with significant participation have included the impact of their work in promotion and tenure documents; faculty members have also used their engagements with TAP to inform teaching, research, conference presentations, and publications. Purdue's culture of engagement is strong. Nearly all faculty approached by TAP consent to participate in its initiatives. Each year TAP involves 50 to 60 faculty participants in efforts ranging from a few days to several months.
- Accommodation of unique personnel and contractual needs: For example, in one partnership TAP funds a healthcare association to promote the use of TAP's performance improvement services to its members. Some partnerships require TAP to utilize non-university personnel, limited-term employees, subcontractors, and other forms of human resources to support very quick responses. In some cases, the university has permitted TAP to employ professional staff on "soft" funding with the objective of developing long-term funding streams. TAP has also participated in many large partnerships that have presented contractual and other requirements that conflict with Purdue policies and practices. In nearly all cases, Purdue leadership has developed solutions to these issues through good-faith negotiations with TAP and its partners.

TAP's Operational Model

Six key characteristics of the operational model for TAP focus on achieving operational excellence in all its partnerships.

1. **A consulting services business model.** TAP's business model is designed with the flexibility to undertake a

range of engagements requiring from a few hours to a few years, with funding of a few hundred to a few million dollars, and with the number of Purdue participants ranging from one to 100. Each group and unit has a designated manager, and each project and initiative has a defined work statement, project manager, and project team. Fluctuations in personnel needs are accommodated by distributing assignments across a large number of projects and employing a combination of full-time staff, faculty, graduate students, subcontractors, and limited-duration and temporary staff. Fiscal management is complicated due to the large number of funding sources (over 200) that present a broad range of compliance, invoicing, confidentiality, liability, and other stipulations. Several mechanisms are employed to plan and control budgets and expenditures in this complex environment.

2. **Quality system.** The TAP quality policy is clearly stated: "Projects are carried out in a professional and confidential manner; we strive for accuracy and quality in all we do" (*McKinnis, 2007, p. 6)*. TAP's quality system is ISO 9000 compliant and contains 85 documents specifying procedures, forms, and checklists for numerous operational functions. One simple example is illustrated in Figure 2. The quality system supports performance excellence through standardized procedures, quality checklists, designated responsibility for corrective actions, and prevention of errors and omissions in project work. Overall quality measures from those served are consistently positive.

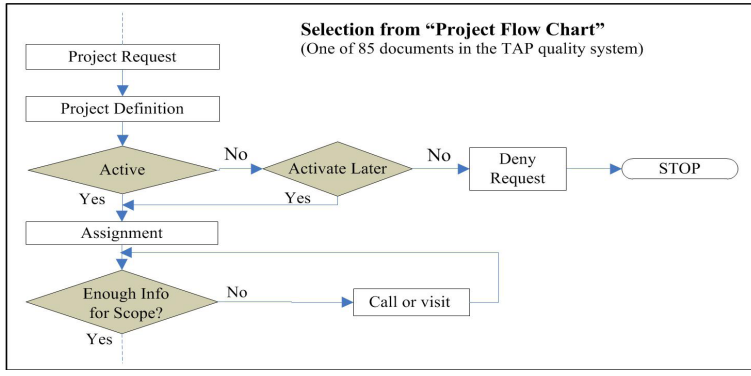

Figure 2. A representative TAP project flow chart.

3. **Clearly stated engagement agreements.** All TAP engagements of more than one day of effort contain a scope of work statement specifying the expected deliverables and outcomes, costs, timing, the designated TAP project manager, the client contact, the client evaluation requirements, and other components.

4. **Selection and training of Purdue participants.** TAP's quality system includes procedures for the selection and training of faculty, graduate students, staff, and other participants. All new participants sign confidentiality agreements and are informed of basic procedures, TAP's mission and objectives, and the evaluation and feedback mechanisms. New graduate students and full-time staff receive basic orientation and appropriate training for their specific assignments.

5. **Responsiveness.** Purdue supports rapid responsivess to client needs. TAP is enabled to provide fee-for-service proposals in one day and has options to engage faculty, graduate students, staff, and subcontractors with a few days' notice. Responsiveness is a key to many of TAP's small and medium-sized engagements.

6. **Administrative support.** TAP provides administrative support for participating faculty, graduate students, and staff. Support includes report-writing assistance, meeting logistics, travel arrangements, and many other tasks that allow participants to focus on technical contributions.

Evolving Growth in Scope, Partnerships, and Impact of TAP's programs

The Technical Assistance Program has its roots in the State of Indiana's response to the recession of the 1980s, when significant economic and global competitiveness challenges emerged, creating structural changes in the manufacturing and business sectors with effects lasting to this day. TAP closely monitors these structural changes in its ongoing development of new initiatives and services.

For example, in the manufacturing sector, several trade and policy associations, advocacy groups, and consulting firms are advocating innovation and transformation. A recent Council on Competitiveness *(2011)* report stated, "American Manufacturing is either in steep decline, doing reasonably well or poised to grow.

Widely available reports and analyses support each of these conflicting views" *(p. 8).* This report asserted that manufacturing is a key element of economic growth, and presented strategies for transformation. The Manufacturing Performance Institute and the American Small Manufacturers Coalition have also presented strategies for manufacturing growth based on the premise of the importance of manufacturing *(Manufacturing Performance Institute, 2011)*. The National Association of Manufacturers *(2012)* is actively promoting a renaissance in this sector, the Boston Consulting Group *(2011)* is reporting a resurgence of U.S. manufacturing, and there are anecdotal descriptions of just such a resurgence *(Fishman, 2012).* The federal government is funding substantial initiatives in manufacturing. A recent example is the National Additive Manufacturing Innovation Institute, a public-private partnership *(U.S. Department of Commerce, 2012)*.

In its first 18 years, TAP services to business, industry, and government consisted of short-term faculty assistance supported by state funding, and most work was performed in the manufacturing sector. At the request of the state government in 2005, Indiana's Manufacturing Extension Partnership Center was moved to TAP with the objective of increasing the effectiveness of state and federally funded programs. As a result, TAP added many services designed to make performance improvement impacts. For example, in 2008, TAP conceived and produced a Green Enterprise Development program with U.S. Department of Labor funding. Faculty in the College of Technology created the basis for the curriculum, and the MEP staff pilot-tested, modified, and refined the content into a 56-hour training program linked to a Society of Manufacturing Engineers' certification. This program has been adopted by community colleges and MEP centers in 15 states. This initiative was supported with total funding to TAP exceeding $1.7 million from multiple private and public sources, including the state's adoption of this initiative for displaced worker training. TAP program services for business, industry, and government have evolved, as shown in Figure 3, to over 100 programs.

Services & Funding Sources Added by Time Period

Services Added

1986-2004	2005-2006	2007-2008	2009-2010	2011-2012
• Faculty Assistance Projects	• Lean & Six Sigma • Quality Systems • Energy Efficiency	• Sustainability • Business growth	• Save Energy Now • ISO 50001	• Innovation Engineering • Frontline Green Worker • Market diversification

Funding Sources Added

1986-2004	2005-2006	2007-2008	2009-2010	2011-2012
• State of Indiana	• Manufacturers • NIST Manufacturing Extension Partnership	• IN Economic Development Corp. • Local Economic Dev. Organizations • U.S. Dept. of Labor & Economic Dev. Association • IN Office of Energy Dev.	• U.S. Dept. of Energy • Companies • MEP centers & community colleges in 15 states	• IN Dept. of Workforce Development • State grants

Figure 3. The evolution of TAP services and funding sources since its inception in 1986.

One example of TAP's impact is reflected in the operations of Red Gold of Orestes, Indiana, a company that has been producing premium-quality tomato products since 1942. The company has multiple long-term partnerships with Purdue through the College of Agriculture, the College of Technology, and TAP. In 2006, Red Gold partnered with TAP to undertake a multiyear workforce transformation project that has involved and trained hundreds of their employees and resulted in millions of dollars in improvement to their business in costs avoided, new investment, and capacity development.

The majority of organizations currently served by TAP are utilizing productivity and performance improvement training, consulting, and implementation. However, TAP services for other important needs are growing. These include innovation in product and process development, sustainability initiatives and "green" business practices, and workshops and training on a broad range of technical and operational topics. TAP is continually adding capability to meet these needs. The scope of sectors served by TAP continues to expand. In the past two years, TAP has undertaken performance improvement initiatives for Purdue University, the Indiana Department of Environmental Management, the Indiana Department of Workforce Development, and the Indiana Department of Transportation. Many additional governmental sector initiatives are currently under discussion.

In order to fully serve its diverse clients, TAP partners with many internal and external groups. The Purdue Center for Regional Development manages the U.S. Economic Development Administration university center grant and partners with TAP to

conduct regional workshops on a range of economic development topics. Purdue faculty members are a critical component of TAP's offerings. The faculty bring capabilities that are in demand, relatively affordable, and often not readily available outside Purdue. In addition to undertaking projects utilizing their core analytical and technical problem-solving skills, faculty develop training and provide public seminars on selected topics. The most utilized faculty disciplines to date have included leadership development, business management and strategy, product development, and industrial engineering tools and analysis. External partners include Ivy Tech Community College, Vincennes University, local economic development groups, and other community and economic development entities.

TAP's work in the business, industry, and government sectors is strongly focused on developing measurable impacts. Most of TAP's reported impact to date derives from the MEP center's work in Indiana's large manufacturing sector. The center's cooperative agreement with the National Institute of Standards and Technology (NIST) prescribes the collection of economic impact data through a well-defined protocol utilized by all MEP centers. Impact for the Purdue MEP center from July 2005 through June 2012 includes 8,994 jobs created and retained; $644,707,000 in sales created and retained; cost savings of $85,647,000; and $171,529,000 in investments.

Operationally, the TAP services group is centrally located in the state capital of Indianapolis, with additional staff strategically placed throughout the state, usually at a Purdue facility. Contributing faculty are drawn from Purdue's main campus in West Lafayette as well as from its regional campuses and College of Technology statewide campuses in several additional locations. The group embraces the TAP quality system and receives consistently high satisfaction scores. The group served 507 business, industry, and government employers in the past fiscal year; received $4,954,000 of funding from 121 sources, and engaged 146 faculty, students, and staff in programs; services, and initiatives.

Meeting the Pressing Need for the Adoption and Meaningful Use of Electronic Health Records

The Institute of Medicine (IOM) report To Err is Human *(Institute of Medicine, 1999)* provided the general public a first comprehensive insight into the substantial safety issues within the United States healthcare system. Reporting that between 44,000

and 98,000 people died each year in U.S. hospitals as a result of medical errors, the report further described the overall cost burden of these incidents to be between $17 and $29 billion. This report was followed a year later by the IOM report Crossing the Quality Chasm *(Institute of Medicine, 2001).* This report became a rallying cry for healthcare providers to improve the quality of care they delivered. The report skillfully highlighted that "the healthcare system as currently structured does not, as a whole, make the best use of its resources" and further reflected that the healthcare system had made very little progress in improving quality and controlling costs. *(Institute of Medicine, 2001, p. 3)* These two significant reports caused hospitals to seriously examine quality within their organizations. Although most healthcare organizations had some form of quality program in place, most began to realize that they did not possess the knowledge base or infrastructure required to make fundamental, system-wide changes that would truly improve the quality of care delivered to patients.

Based on the identified need for improvement in hospitals and healthcare organizations, initiatives were undertaken to implement systems engineering principles in the healthcare system. The report Building a Better Delivery System: A New Engineering/Health Care Partnership *(Institute of Medicine & National Academy of Engineering, 2005)* specifically discussed applying a "systems approach" to healthcare delivery and utilizing the tools of systems engineering.

The Indiana Hospital Association (IHA), which represents 133 acute care hospitals in Indiana and is the home of the Indiana Patient Safety Center, provides its constituents with relevant information, tools, and resources to assist them in meeting the challenges of achieving quality patient care while maintaining cost efficiency. Based on the aforementioned reports, the IHA identified a genuine need for a resource to assist hospitals in applying systems engineering principles to their respective organizations to improve the quality of care. The IHA provided a $50,000 seed grant to TAP to develop this resource and launch a program dedicated to improving quality of care in Indiana hospitals.

The project started with two faculty members and three graduate students providing consulting services in patient flow and layout analyses. By 2006 the demands for this service grew to such a degree that the faculty alone could not balance teaching and research obligations while consulting and managing projects. Individuals with clinical and quality expertise were employed by TAP as full-time dedicated staff in 2007. This enabled faculty

to serve as subject matter experts with the support of dedicated project managers to handle project logistics.

In late 2006 the Indiana State Department of Health also approached the TAP healthcare group to develop a quality improvement training program for public health workers throughout the state. It was becoming clear at the time that hospital systems, in order to make transformational changes within their organizations, would need more than layout redesign and patient flow assistance from Purdue. In response, the TAP healthcare group created lean healthcare and lean six sigma curricula specifically tailored for the healthcare sector, including hospitals, clinics, and public health organizations. The intent of these curricula was to build on successful, evidence-based performance improvement and technology adoption practices from industry; fully adapt these principles to healthcare settings; and deliver highly effective offerings to targeted healthcare audiences. These curricula were well received among healthcare workers and enabled broad access to Indiana hospitals and public health departments. A key to the successful implementation of the curricula was Purdue's success in employing clinical subject matter experts and systems engineering, as well as quality experts to deliver the training, certification, and implementation programs.

In recent years the federal government has increasingly spurred hospitals and healthcare providers to improve care and control costs. However, little funding was provided to assist the organizations in their efforts. With the passage of the American Recovery and Reinvestment Act of 2009, a heightened focus on health information technology permitted an unprecedented flow of funds to hospitals and healthcare providers to make fundamental changes to their organizations through adoption of electronic health records intended to improve patient care. A key component of this legislation was the formation of Regional Extension Centers throughout the United States that would assist primary care providers, community health centers, and critical access hospitals in the selection, implementation, and attainment of "Meaningful Use," a set of federal standards defined by the Centers for Medicare & Medicaid Services that govern the use of electronic health records *(Medicare and Medicaid Programs, 2010).*

In 2009, Indiana had over 8,000 primary care providers, 33 critical access hospitals, and over 100 community health centers. Less than 20% practiced active use of electronic health records. The TAP healthcare group's significant work in process improvement, its ability to rapidly mobilize Purdue resources, and its existing rela-

tionships with hospitals and healthcare providers across the state positioned Purdue to submit a successful proposal for a Regional Extension Center.

In February 2010 Purdue received a $12 million award for the TAP healthcare group to establish the Indiana Regional Extension Center (REC). This project immediately employed 20 staff to start the process of assisting providers. Crucial to prompt and successful implementation of the grant award was the engagement and service infrastructure that the university already had in place through the TAP healthcare group. The REC staff was able to "hit the ground running" in its challenging work of technology adoption of electronic health records.

To date the REC has worked with approximately 2,300 providers, 27 critical access hospitals, 19 hospitals, and 81 federally qualified health center sites to adopt electronic health records (EHR) technology. Through the REC's assistance these providers have realized over $94 million in earned incentives. These incentives are based on achieving full implementation of electronic health records and utilizing the system to improve patient outcomes. A key element of the Purdue proposal was demonstrating the capacity to develop sustainability of the center before the project period end date of early 2014. The sustainability plan has progressed well, with the REC having signed over $570,000 in fee-for-service contracts through late 2012.

The TAP healthcare group enjoyed considerable additional growth in the past year, and it adopted the name Purdue Healthcare Advisors (PHA) to communicate the full scope of its healthcare performance improvement and technology adoption capabilities. The tag line "Transforming healthcare through innovation solutions" reflects the PHA mission. In the words of Michelle Haendiges, of Haendiges & Associates, PC (quoted in the *Purdue Technical Assistance Program: A year in review, 2012*):

> I advise other physicians to grab someone's hand—like Purdue—and let them guide you through the EHR [electronic health records] Meaningful Use process. Now my patients don't have to call into the doctor's office for lab results, because we have a secure, web-based portal that gives patients access to their own clinical information—in detail and without unnecessary delays. *(p. 5)*

Hospitals, health systems, and providers increasingly recognize that solving complex healthcare system problems requires

high-level external expertise such as that available through PHA. Funding levels from hospitals, the federal government, and other sources for these initiatives is unparalleled, and PHA is receiving record numbers of requests for assistance. PHA currently employs over 50 staff, faculty, and graduate students, works with over 100 hospitals and healthcare providers a year, and is funded by over 100 sources. This is but one recent example of the scope and impact of the university engagement model offered in this essay.

Future Challenges and Opportunities

The evolving needs of society and the changing nature of universities present several challenges and opportunities for the TAP engagement model discussed here. We present a few representative possibilities for increasing and measuring impacts, as well as for broadening the scope of the model.

Achieving shorter-term solutions and impacts. For example, the TAP cooperative agreement with the Department of Health & Human Services is driving the adoption of electronic health records in a fraction of the time required just a few years ago. Shorter term responses require updated university procedures for proposal development, contract issue resolution, and staffing, and require TAP's support systems and culture to be even more time-sensitive. The time challenges are especially difficult for faculty, who are typically fully committed a semester or more in advance and cannot easily adjust commitments in a few days or weeks to accommodate urgent new opportunities.

Measuring and documenting impact on faculty and graduate students. TAP's faculty participants consistently report satisfaction with their work and provide anecdotes of impacts on their teaching, research, and, in a few cases, promotion and tenure. TAP's graduate students consistently report a positive impact in job searches, often receiving more offers than other students. Measuring and increasing these impacts remains an unfulfilled opportunity.

Thinking strategically regarding new opportunities, partners, and models for service. Purdue and TAP are presented with an ever-increasing range of new engagement opportunities. Some are not a good fit with current Purdue capabilities but represent an important societal need. Others are a strong fit with Purdue but have available alternate solution providers. Several opportunities involve a compelling need but have no readily apparent source of funding. Most recently, the private sector has approached TAP with several requests to partner where the university and private sector

missions are aligned. These situations present opportunities that require careful strategic review.

Reflections on the TAP Engagement Model

The engagement model described in this essay has been developed over the past 27 years with consideration of efforts at other universities, networking with practitioners and scholars, participation in scholarship of engagement conferences and events, discussions with external partners and those served, and risk-taking. In recent years several universities have inquired about TAP's experience, seeking to develop or increase initiatives that achieve societal impacts. The TAP demonstrates a business model appropriate for a large-scale systems impact effort that offers sustainable financial resources for program support as well as significant impacts on economic development and societal advancement.

Although the development of an engagement model is always a work in progress, we consider certain attributes of the TAP model fundamental to achieving performance improvement and technology adoption in healthcare, manufacturing, and government. This essay is intended to provide a detailed discussion of Purdue's model. Certain fundamental characteristics, however, especially those having to do with leadership and culture, would likely be approached differently by other institutions, depending on their unique culture and leadership environments:

- A culture of faculty participation in engagement: Purdue faculty consistently accept opportunities to participate in TAP, even though in most cases such participation does not directly affect promotion and tenure. Those served seek faculty involvement and report high regard for faculty contributions. Using examples presented in this essay, other universities seeking to replicate the TAP model should seek to achieve a culture of faculty participation in ways that fit their institutional policies and practices.
- A culture of university leadership and support for engagement: Purdue's presidents and senior leadership consistently embraced a vision for achieving societal impacts through engagement. Engagement leaders visiting Purdue have disclosed limitations in achieving such a culture among their senior leadership. These institutions may find that alternate approaches—con-

sistent with their leadership environment—will result in strong university support of engagement.

- State leadership in engaging Purdue (and other institutions of higher education) to meet societal challenges: The State of Indiana has requested Purdue leadership for state and federal initiatives and has asked TAP to provide business assistance, performance improvement training, and consulting in its agencies. Several universities in discussion with Purdue have reported difficulty in achieving such a culture in their states, yet in keeping with Purdue's model, these institutions should find ways to convey the value of engagement to their legislatures.

Some fundamental characteristics of the TAP model, however, are more easily replicated:

- A consulting business model: The TAP business model has been developed over several years. Most of TAP's leadership is drawn from the private sector, bringing an important user perspective to the university. Those served appreciate the options to engage faculty, students, and staff through responsive, flexible, and well-managed mechanisms. The university supports a model that relies solely on external funding and is integrated with the colleges. In addition, the faculty embraces a model that engages them with projects of interest in a productive and well-defined manner.
- Core funding for leverage: In TAP's experience the availability of core funding has been essential to success. TAP's core funding comes from state funding for business assistance. This funding has enabled TAP to provide matching funding for a large federal cooperative agreement, allowed TAP to serve important needs of the day such as Clean Air Act compliance in the mid-1990s, and permitted TAP to provide limited no-cost assistance that lead to significant fee-based engagements.
- Multiple options for faculty, student, and professional staff engagement: TAP provides its services through a combination of full-time staff and faculty, students, and professional staff from other Purdue departments. The multiple options for participation from those

> outside TAP, especially the faculty, have been essential to meeting the needs of those served, in many cases making TAP the only service option they have considered.

Based on the TAP experience, we conclude that universities can develop successful engagement models to address challenging societal issues in healthcare, manufacturing, government, and other sectors. The university's role in this evolving domain is challenging, and requires creative and innovative thinking, commitments to enable faculty and staff to serve in a flexible and highly responsive consulting model, and commitments to develop client-focused partnerships. Those served are attracted to the subject matter expertise of the faculty and seek practical and effective methodologies to apply this expertise to a long list of tough issues. Although developing effective models of technology adoption and performance improvement is difficult, the needs of society present a compelling case for universities' making strong commitments to meeting these pressing challenges.

References

Akridge, J., Newton, K., Bennett, R., Cerny, K., Diamond, D., Eddy, M., . . . Walker, W. (2010). *Reaching new heights: Re-accreditation self-study report for the Higher Learning Commission of the North Central Association of Colleges and Schools*. Retrieved from http://www.purdue.edu/accreditation/2010/index.php

Audretsch, D. B., & Phillips, R. J. (2007). *Entrepreneurship, state economic development policy, and the entrepreneurial university*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=963401.

Beckman, M., Penney, N., & Cockburn, B. (2011). Maximizing the impact of community-based research. *Journal of Higher Education Outreach and Engagement, 15*(2), 83–103.

Boston Consulting Group. (2011). *Made in the USA, again: Manufacturing is expected to return to America as China's rising labor costs erase most savings from offshoring* [Press release]. Retrieved from http://www.bcg.com/media/PressReleaseDetails.aspx?id=tcm:12-75973

Council on Competitiveness. (2011). *Make: An American manufacturing movement*. Washington, DC: Author.

Creighton, R., Sweeney, J., & Cauley, K. (2010). Consortium, university, and program impact on regional economy and community. *Journal of Community Engagement, 1*(2), 1–12.

Delorme, Y., Anupindi, K., Kerlo, A. E., Shetty, D., Rodefeld, M., Chen, J., & Frankel, S. (2012). Large eddy simulation of powered Fontan hemodynamics. *Journal of Biomechanics, 46*(2), 408–422. Retrieved from http://dx.doi.org/10.1016/j.jbiomech.2012.10.045

Fishman, C. (2012, December). The insourcing boom. *The Atlantic Mobile*. Retrieved from http://m.theatlantic.com/magazine/archive/2012/12/the-insourcing-boom/309166/3/

Fitzgerald, H. E., Bruns, K., Sonka, S. T., Furco, A., & Swanson, L. (2012). The centrality of engagement in higher education. *Journal of Higher Education Outreach and Engagement, 16*(3), 7–28.

Fitzgerald, H. E., & Simon, L. K. (2012). The world grant ideal and engaged scholarship. *Journal of Higher Education Outreach and Engagement, 16*(3), 31–53.

Institute of Medicine. (1999). *To err is human: Building a safer health system*. Washington, DC: National Academies Press. Retrieved from http://www.iom.edu/~/media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20%20report%20brief.pdf

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academies Press. Retrieved from http://www.iom.edu/~/media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf

Institute of Medicine & National Academy of Engineering. (2005). *Building a better delivery system: A new engineering/health care partnership.* Washington, DC: National Academies Press. Retrieved from http://www.nationalacademies.org/onpi/030909643X.pdf

Jischke, M. (1998). The land-grant mission and international outreach. *Journal of Public Service & Outreach, 3*(3), 3–9.

Kellogg Commission on the Future of State and Land-Grant Universities. (1999). *Returning to our roots: The engaged institution.* Washington, DC: National Association of State Universities and Land-Grant Colleges.

Konrad, R., Lawley, M., Criswell, M., Hasan, I., Chakraborty, S., Pekny, J., & Doebbeling, B. (2007). Applying system engineering approaches to the care of complex patients. *Journal of General Internal Medicine, 22*(3), 431–437.

Manufacturing Performance Institute. (2011). *2011 next generation manufacturing study.* Shaker Heights, OH: The MPI Group.

McKinnis, D. (2007). *TAP quality systems manual.* North Carolina State University. Retreived from http://www.tap.purdue.edu/AboutUs/default.aspx

McKinnis, D. R., McNamara, K. T., Kuczek, T., & Salvendy, G. (2001). The instructional benefits from faculty participation in industrial outreach. *Journal of Engineering Education, 90*(3), 429–435.

Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule. 75 Fed. Reg. 44314 (July 10, 2010) (to be codified at 42 CFR pts. 412, 413, 422, and 495).

National Association of Manufacturers. (2012). *A manufacturing renaissance: Four goals for economic growth.* Washington, DC: National Association of Manufacturers.

Nicotera, N., Cutforth, N., Fretz, E., & Thompson, S. S. (2011). Dedication to community engagement: A higher education conundrum? *Journal of Community Engagement and Scholarship, 4*(1), 37–49.

Purdue Technical Assistance Program. (2012). *A year in review: Solutions for success*. Retrieved from Purdue University, Technical Assistance Program website: http://www.tap.purdue.edu/AboutUs/reports/ar_archive.aspx

Purdue University. (2008). *New synergies: Purdue University strategic plan*. Retrieved from http://www.purdue.edu/strategic_plan/documents/StrategicPlanBrochure.pdf

The role of engaged universities in economic development: Final report of the October 15–16, 2007 conference. (2008). Ann Arbor, MI: University Research Corridor.

Trani, E., & Holsworth, D. (2010). *The indispensable university: Higher education, economic development, and the knowledge economy.* Lanham, MD: American Council on Education/Rowman & Littlefield Publishers.

U.S. Department of Commerce, Office of Public Affairs. (2012). *Obama administration announces new public-private partnership to support manufacturing innovation, encourage investment in America* [Press release]. Retrieved from http://www.commerce.gov/news/press-releases/2012/08/16/obama-administration-announces-new-public-private-partnership-support

Witz, S. M. (2007). The Regenstrief Center for Healthcare Engineering: Designing, implementing, and sustaining interdisciplinary solutions to transform healthcare delivery systems. *International Journal of Healthcare Technology and Management, 8*(3–4), 399–416.

About the Authors

David R. McKinnis is the director of the Technical Assistance Program and assistant vice president for engagement at Purdue University where he has served in engagement roles for the past 27 years. He earned his doctorate in industrial engineering at Purdue University in 1999. McKinnis develops a broad range of engagement partnerships with professional associations, governmental units, foundations, other universities, businesses, manufacturers, and healthcare providers. He also represents the university in many external capacities and supports the scholarship of engagement among the Purdue faculty.

Mary Anne Sloan is the managing director of Global Affairs at Purdue University. In her current role, Sloan is facilitating work with Purdue STEM students, faculty, alumni and public leaders to attract and expand high-technology job opportunities and new ventures within second-stage and larger companies. Sloan has a bachelor of science in nursing from Purdue University and masters of business administration from University of Phoenix.

L. David Snow is the director of the Purdue University Manufacturing Extension Partnership Center. Snow has 33 years of experience in advanced manufacturing environments and in economic development within the intensive manufacturing state of Indiana. His background includes aerospace, industrial technology, quality management systems, technology transfer, and

program management. He holds a bachelor of science in technology from Indiana State University.

Suresh V. Garimella is Purdue University's chief global affairs officer and the Goodson Distinguished Professor of Mechanical Engineering. His areas of expertise include nanotechnology, renewable and sustainable energy systems technology and policy, thermal management of electronics, and global academic-public-private partnerships. He received his Ph.D. from the University of California at Berkeley in 1989.

© *Journal of Higher Education Outreach and Engagement*, Volume 18, Number 1, p. 215, (2014)
 ISSN 1534-6104

Global Expansion Among U.S. Universities: The Imperative to Examine Our Motives

Gretchen L. Birbeck

Abstract

The growing enthusiasm for international engagement among U.S. universities reflects the great potential gains that participation offers to both U.S. and international partners. To ensure that the benefits of such partnerships are achieved, potential participants must carefully examine and explicitly discuss their personal and institutional motivations for involvement in global research, education, and development programs. Failure to make this crucial self-assessment places such endeavors at risk of unintended negative consequences and ultimate failure.

Introduction

As a medical student in 1992, I met with the dean of students seeking approval for an international elective. I went prepared with funding in hand from the American Medical Association and a letter of invitation from the chief medical officer of a large bush hospital in southern Africa. The meeting was short and grim. Her perspective was clear—it wasn't safe, and it wouldn't advance my career in any meaningful way. In fact, time abroad would detract from my ongoing research project and might threaten the "with Honors" qualification to the degree I had been working on so hard during the prior 3 years.

Things have changed a great deal over the past two decades. In the early 1990s, U.S. student exchange programs involved primarily the United Kingdom and Europe, and few medical schools offered opportunities for international rotations. By 1998, 15% of medical schools offered international electives, and this proportion increased to 30% by 2006 *(Anspatcher, Evert, & Paccione, 2011).* Student interest *(Panosian & Coates, 2006)* and an explosion in funding for international activities, largely mediated by monies for HIV/AIDS-related projects, have been the primary forces driving this educational expansion. Nongovernmental organizations in areas of the globe with high rates of HIV have grown exponentially. U.S. philanthropic entities previously focused on domestic issues have expanded into low-income tropical countries. International developmental assistance for global health has increased from $5.2 billion in 1990 to $21.8 billion in 2007, with most funds spent on

donor-determined, disease/condition-specific programs and only a very small proportion of funds directed toward general budget support and debt relief *(Ravishankar et al., 2009).* Today, most top medical schools have a dedicated program in global or international health, and in 2007 the Consortium of Universities for Global Health was founded *(Murray et al., 2012)*.

In parallel with increased U.S. spending on global health, there has been a timely recognition that issues in global public health transcend the medical sciences. Efforts to address global health priorities require substantive contributions from the fields of political science, psychology, anthropology, and agriculture, among others *(Bradley et al., 2011)*. Consequently, academic interests in global health extend into numerous disciplines *(Heimburger et al., 2011).* In the past decade, many degree-granting global health programs have been formally introduced into existing departments, including those lacking specific expertise or historical interests in public health or international studies *(Hill, Ainsworth, & Partap, 2012; Kanter, 2008; Velji & Bryant, 2011).*

Despite the recent U.S. financial meltdown, there is no indication that previously insular disciplines in American academia are going to retreat from their new global outreach activities. Undergraduate concentrations in international fields of study and international interest groups in professional schools are becoming the norm *(Hill et al., 2012)*. Although federal funding for well-established, long-standing international programs, like Title VI of the Higher Education Act, have been cut to the bone *(Wilhelm, 2011),* funding in global health has continued to grow *(Ravishankar et al., 2009).* Dr. Francis Collins, director of the U.S. National Institutes of Health, has identified global health as one of his top five initiatives *(Wadman, 2010)*, and funding opportunities for international research collaborations in a broad range of academic fields relevant to health have never been better.

Having chosen a career path in global health long before it was fashionable, I was in the right place at the right time and have benefited greatly from this new trend. My U.S. and international students today continue to benefit from America's growing enthusiasm for global partnerships. The United States' support for international research and capacity building often reflects our best intentions and can yield collateral benefits far beyond the prescribed programs. At the same time, as with any rapid growth and any situation in which megadollars are at play, there are risks that deserve consideration. Many of these risks are never explicitly dis-

cussed, possibly due to fears of quelling enthusiasm and sending U.S. funders and other actors into retreat.

My own experiences have been largely limited to health care and research programs in several African countries, so I will restrict my comments and vignettes to what I know best. However, I believe the general principles and concerns set forth are likely applicable to most disciplines, particularly areas of study now engaging in global activities which, like medicine, were primarily domestic 20 years ago.

Motivations for Global Engagement

What are our underlying motivations for global engagement? Are they different for U.S. and international partners? Frequently when U.S. academics, physicians, or students seek opportunities to work or study in low-income, international settings, the implicit assumption is that they are largely motivated by altruism. This is an unfortunate assumption, as it leaves our international partners in the unenviable position of being the "beneficiaries" of our "goodwill." Furthermore, I don't think this is an honest reckoning of why most U.S. students and/or academics seek opportunities overseas. The number of applications I receive from exceptional students seeking opportunities abroad annually is staggering. Most come with a letter detailing the student's strong desire to make the world a better place, yet very few of these students' otherwise excellent résumés show any evidence of previous (i.e., U.S.-based) philanthropic activities. The incongruity is striking. This is not to criticize the nonaltruistic motivations for global engagement, but rather to point out that more forthright admissions and explicit discussion of why we want to do such work needs to be undertaken. Furthermore, these discussions should include students, educators, administrators, funders, and our global partners.

Individual motivation for international endeavors may include natural curiosity and/or a desire to expand professional and personal perspectives. Our specific fields of research may be advanced by stepping outside U.S. laboratories, classrooms, and clinics. There isn't anything inherently wrong with honestly detailing why we do what we do. But when we drop the premise of altruism, then we must honestly examine whether or not our gains in the exchange have equitable corresponding costs and gains for our partners. For educators, this may mean considering whether the teaching experience we wish to offer really meets the needs and priorities of the host community. We may find ourselves challenged to develop

new curricula and/or expand our educational strategies to student-targets with whom we have little familiarity. For U.S. students and trainees who are accustomed to educational systems developed for and catering to them, an honest assessment of motivations with potential host institutions may lead to an appreciation that the educational systems and/or health care institutions of low-income countries do not owe them a "good experience" or an "interesting rotation." It is usually possible to balance an exchange program or experience so that all parties benefit, but only with open, explicit discussion about expectations and contributions.

Understanding institutional motivation is even trickier than dissecting that of the individual. Institutional motivations are usually a complex conglomeration that includes a component of altruism but is equally impacted by the desire to attract top students and the reality that international collaborations can yield significant benefits in terms of academic products (e.g., publications) and acquisition of money for the indirect costs associated with federally funded projects. Geographically, the distribution of global development funds and activities does not reflect economic or health needs (Ravishankar et al., 2009). Clearly, motivations for engagement are complex and difficult to ascertain, but these do deserve careful examination.

Failure to Examine Motives Yields Unintended Consequences

When international activities in research, education, development, or outreach proceed without true partnership and honest dialogue, the work can yield unintended consequences and failure to achieve overall goals. Below are five vignettes depicting poorly planned activities and their unintended consequences.

Vignette 1: Working without partners doesn't work. A group of 28 volunteers visited a small rural hospital in southern Africa for a building project funded by their U.S. philanthropic organization. They arrived en masse to renovate the nursing students' quarters. Almost half the group members were too old or too young to actually perform any of the labor—and manual labor was readily available locally, regardless. The older individuals in the group, many of them with chronic health conditions, required a substantial amount of time and resources from the hospital's outpatient department, as they came ill-prepared for the tropical environment and had not been medically cleared for the visit. Health care services, including medications, were provided free of charge. The

hospital had only four vehicles for all the institution's transportation needs. These were rented by the visitors for the full duration of their stay, partly for transportation of materials for building, but more often for group members to make trips to local tourist destinations. Consequently, hospital physicians, nurses, and administrators were unable to take scheduled trips into town (more than 40 kilometers away) to collect their pay and purchase goods not available at the local market. Due to poor planning and limited local collaboration, the building project remained unfinished when the visitors departed. No clear plans were in place for completion of the work. The nursing quarters, previously suboptimal but habitable, were left gutted. The building materials purchased to finish the work were unsecured and disappeared within a week. On their return flight home, the visitors regaled their fellow travelers about their wonderful trip.

Comment: Unfortunately, I didn't fabricate any part of this vignette. The cost of the building project itself represented only about 10% of the visitors' overall budget, with most of their fundraising going toward airfares. The cost paid to purchase the round-trip airfares for the 28 visitors could have provided a substantial proportion of the annual operating costs for the hospital. A careful delineation of the group's overall goals and honest discussion with local partners about the best way to achieve these goals might have prevented this debacle. Certainly the visitors didn't realize that their safari fun prevented hard-working hospital staff from making a critical monthly trip into town. They also did not anticipate that their efforts would leave the nursing quarters in a worse state than before they arrived. The group was undoubtedly puzzled when their plans for a subsequent trip were cancelled without explanation by hospital administration. This situation was a definite lose-lose for everyone.

Vignette 2: The research mercenary. A junior investigator acquired institutional funding to conduct "international clinical research" without any specific project delineated. The funds included several thousand dollars for data acquisition as well as 80% salary support for 2 years. He contacted numerous senior investigators working in his discipline who were based overseas, seeking access to "samples" and "patient data," but was frustrated by the lack of response to his e-mails. His persistence eventually resulted in a conference call with two well-established researchers who suggested he spend some time in their hospital working with patients from the region who suffered from the disease he wished to study, since he had no clinical experience with the disease and

no knowledge of the health system or the patient population. Furthermore, since his clinical specialty was not locally available, such an exchange would offer ample opportunities for him to make a local contribution to medical education and clinical care while also building his own expertise. The junior researcher rejected this offer, indicating that he had read a great deal about the disease he wished to study and that his U.S. mentors (none of whom had any substantive experience working abroad) expected him to have an established plan for a project before he traveled.

Comment: The days in which a developed-country researcher parachuted into a less developed setting, used local resources and personnel to collect data and/or biological specimens, and jetted out to independently write up his/her findings are, thankfully, mostly behind us. In the past, these contributions to the literature were often invalid, having been gathered with no understanding of or insights into the local context. Even when the findings were valid, the researchers left scorched earth behind with no follow-up investigations possible. More subtle variations on this theme, however, remain inherently problematic.

Vignette 3: The project succeeds, but at what cost? A U.S. university was awarded a federal grant to conduct a disease-specific research project in the capital city of W. In their enthusiasm for launching the project rapidly and for having the very best possible staff, the project faculty offered signing bonuses, including a vehicle for personal use, and salaries that were more than triple the usual local salaries to the top physicians, nurses, and health services administrators in Z. Within a month, the U.S. University had finished hiring all the necessary staff for the project. Most of those hired had abruptly left their jobs as civil servants in the country's only teaching hospital or within the Ministry of Health to secure their new posts. In less than 3 months, the capital city's government health service lost 25% of its top administrators and senior physician-leaders and was left in a shambles.

Comment: Most academics are sensitized to concerns that international collaborations may inadvertently facilitate the relocation of much-needed professionals from low-income to high-income countries. Less appreciated are the risks of contributing to internal brain drain (Bristol, 2008). This 3-year project was successful in meeting its stated scientific aims, but the cost to the public health sector and the people served was immeasurable. Unsurprisingly, the project investigators encountered a great deal of hostility from government officials in Z when they sought to submit a proposal for renewal. They eventually relocated their work back to the States.

The failure to fully consider the local effects of establishing projects and activities in resource-limited settings is a common problem. Since no honest dialogue was established between stakeholders prior to the project's initiation, frank feedback as to the reason the researchers' continued work was not welcome was also absent.

Vignette 4: The medical tourist. Morning Report at Mission Hospital involves a review of clinical activities by the health care workers providing night coverage, as well as a discussion regarding any activities anticipated that day. At the end of one particularly lengthy morning meeting, the chief medical officer announced that student nurses, medical students, and trainees in health care administration from Donor Country would spend the next 3 days shadowing staff at Mission Hospital. Quiet grumbling erupted and several staff reluctantly raised concerns about inappropriate attire and behavior by the last such group. Hospital staff were especially distressed that a similar group the prior month had appeared on the wards at inopportune times without an escort wearing beach attire and snapping photos of children in the malnutrition unit without seeking permission from parents or nursing staff. Debate ensued about how to curb these behaviors without risking loss of the donated supplies and money often provided by such groups.

Comment: Many hospitals and clinics in low-income countries now have formal policies aimed at discouraging medical tourism. It's hard to imagine walking into a pediatric burn unit in the United States and seeing a sign that reads "PLEASE: NO PHOTOS"; however, such postings are commonplace today in many resource-limited health care settings. Good partnerships result in the dissolution of the "us" versus "them" mentality that enables such insensitive acts. More collaboration and less tourism could go a long way toward ameliorating such problems.

Vignette 5: The academic "exchange" program. A respected professor at an African university was approached by administrators from a prominent U.S. university who expressed an interest in developing a student exchange program. The professor was eager to learn more, as she had several exceptional graduate students who might benefit from such an exchange. She was also hopeful that an exchange might include visiting teaching faculty who could help with the ever-increasing educational demands of her department, which had seen a 30% decrease in teaching staff and a 100% increase in student enrollment over the past 5 years. However, she left the meeting with the U.S. University officials quite deflated. Their proposal involved sending U.S. students to her university

but offered no resources for her students to go to the states, and did not include a plan for U.S. faculty to assist with teaching. The professor was concerned that her own administrators might want to encourage the "exchange," especially if tuition dollars were paid to the African university. Unfortunately, the exchange as planned would only increase her workload and that of her faculty, especially since no mention was made of support for local coordination of U.S. student activities.

Comment: University exchange programs abound, but on close examination most of these are a rather one-sided exchange. Can resources be leveraged through U.S. participants to facilitate a more equitable situation? Is there an appropriate appreciation of and compensation for local logistics? The challenges of organizing an exchange where landline telephones do not work, each cellular call placed comes at a personal cost, electricity is unpredictable, and local infrastructure is limited should not be underestimated, and extrapolating the effort required from that needed to organize student activities in the United States is not valid. In addition, consideration needs to be given to the cost, monetary and otherwise, of infrastructure and resources to be allocated to U.S. students. Will these resources (e.g., housing, transportation, classroom space) be made available at the expense of local student opportunity? Are U.S. students encouraged to integrate, or do they roam around in "packs" that even the most friendly, outgoing local would hesitate to engage?

Discussion

These vignettes provide only a superficial overview of the complexities of international engagement. Ethical issues inevitably arise when those from relatively wealthy regions undertake activities in resource-limited settings. Donor programs meant to improve lives and circumstances may inadvertently foster dependence rather than focusing on the development of sustainable systems *(Sanders, Igumbor, Lehmann, Meeus, & Dovlo, 2009),* whether these are health systems or educational systems. And inevitably "those who intervene and those who are affected may have different preferences and values" *(Wikler & Cash, 2009, p. 249).* The first step toward overcoming the risk of unintended consequences is open and honest dialogue. It is important to appreciate that rather than immediately clarifying perspectives, truly honest exchange will frequently reveal challenging choices to be made between the competing interests and objectives of the partnering community, the donors/sponsors of the activity, and the U.S. academic entity seeking international

engagement *(Wikler & Cash, 2009)*. To be better prepared to have a truly honest exchange with a potential international partner, self-examination at the individual and institutional levels are needed. See below 10 critical questions that can offer a starting point for this important inquiry.

1. Where did the project idea or research question(s) originate?
2. Does this program address a local priority? If not, and it is a research project, might the findings from the project inform local priority setting?
3. What local resources are required to conduct the work? Are these resources being adequately paid for, and is this compensation being made to the appropriate people or entity? With regard to local resources (either material or human), what local disadvantages may result from the utilization of these resources by the project?
4. Is there someone local you will/can partner with in this work? If yes, do they have the expertise needed? If they do not, can project resources be used to help them acquire this expertise?
5. Is there any aspect of the work that will be sustained or sustainable when the project is complete? If so, how will it be sustained?
6. What will you and/or your institution gain from the success or failure of this endeavor?
7. What does your partner have to gain? To lose?
8. What are the potential unintended consequences if your work fails? If it succeeds?
9. What are your motivations for engagement? Your institution's? Your international partner's?

Conclusions

Global engagement and international collaborations can offer a great deal to everyone involved. However, explicit discussion regarding all parties' motivations for participation is needed for this potential to be realized. Partnerships must include true joint decision-making and should require that host communities drive the setting of priorities. Only open dialogue can establish

the knowledge and understanding that form the foundation of an enduring partnership.

References

Anspatcher, M., Evert, J., & Paccione, P. (2011). Introduction to global health education. In J. Chase & J. Evert (Eds.), *Global health training in graduate medical education* (2nd ed., pp. 5–7). Retrieved from http://globalhealtheducation.org/resources_OLD/Documents/Both%20Students%20And%20Faculty/GH_Training_in_GME_Guidebook_2Ed.pdf.San Francisco, CA: iUniverse.

Bradley, E. H., Fennell, M. L., Pallas, S. W., Berman, P., Shortell, S. M., & Curry, L. (2011). Health services research and global health. *Health Services Research, 46*, 2019–2028. doi:10.1111/j.1475-6773.2011.01349.x

Bristol, N. (2008). NGO code of conduct hopes to stem internal brain drain. *Lancet, 371*(9631), 2162.

Heimburger, D. C., Carothers, C. L., Gardner, P., Primack, A., Warner, T. L., & Vermund, S. H. (2011). Nurturing the global workforce in clinical research: The National Institutes of Health Fogarty International Clinical Scholars and Fellows Program. *American Journal of Tropical Medicine and Hygiene, 85*(6), 971–978. doi:10.4269/ajtmh.2011.11-0141

Hill, D. R., Ainsworth, R. M., & Partap, U. (2012). Teaching global public health in the undergraduate liberal arts: A survey of 50 colleges. *American Journal of Tropical Medicine and Hygiene, 87*(1), 11–15. doi:10.4269/ajtmh.2012.11-0571

Kanter, S. L. (2008). Global health is more important in a smaller world [Editorial introductory]. *Academic Medicine, 83*(2), 115–116. doi: 10.1097/01.ACM.0000305155.66318.58

Murray, C. J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A. D., Michaud, C., . . . Memish, Z. A. (2012). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet, 380*(9859), 2197–2223. doi:10.1016/S0140-6736(12)61689-4

Panosian, C., & Coates, T. J. (2006). The new medical "missionaries"—grooming the next generation of global health workers. *New England Journal of Medicine, 354*(17), 1771–1773. doi:10.1056/NEJMp068035

Ravishankar, N., Gubbins, P., Cooley, R. J., Leach-Kemon, K., Michaud, C. M., Jamison, D. T., & Murray, C. J. (2009). Financing of global health: Tracking development assistance for health from 1990 to 2007. *Lancet, 373*(9681), 2113–2124. doi:10.1016/S0140-6736(09)60881-3

Sanders, D., Igumbor, E., Lehmann, U., Meeus, W., & Dovlo, D. (2009). Public health in Africa. In R. Beaglehole & R. Bonita (Eds.), *Global public health—a new era* (2nd ed., pp. 174–175). Oxford, England: Oxford University Press.

Velji, A., & Bryant, J. H. (2011). Global health: Evolving meanings. *Infectious Disease Clinics of North America, 25(*2), 299–309. doi:10.1016/j.idc.2011.02.004

Wadman, M. (2010). Francis Collins: One year at the helm. *Nature, 466*(7308), 808–810.

Wikler, D., & Cash, R. (2009). *Ethical issues.* In R. Beaglehole & R. Bonita (Eds.), *Global public health—a new era* (2nd ed., pp. 249). Oxford, England: Oxford University Press.

Wilhelm, I. (2011, April 13). Language and international-studies programs face "devastating" cuts under budget deal. *The Chronicle of Higher Education.* Retrieved from http://chronicle.com/article/Language-and/127122/

About the Author

Gretchen L. Birbeck is a professor in neurology and public health at the University of Rochester in Rochester, New York. For the past two decades she has divided her time between the U.S. and sub-Saharan Africa where she provides clinical care, teaches and conducts research on common neurologic disorders in the region. She is director for the Chikankata Epilepsy Care Team in rural Mazabuka, Zambia; adjunct faculty at the University of Zambia and the University of KwaZulu Natal; and a member of the Blantyre Malaria Project team in Malawi. Dr. Birbeck completed her medical degree at the University of Chicago, her neurology training at Johns Hopkins, and her tropical medicine training at the Liverpool School of Tropical Medicine and Hygiene in Liverpool, England.