POD Network News Fall 2014

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**Reaching Out: POD in the 21st Century**

Members of the POD Network in Higher Education are likely aware of a number of its vibrant and productive committees. Led and staffed by volunteers from the organization, familiar committees prepare the annual conference, plan events for members’ professional growth, attend to diversity in teaching and in educational development, oversee publications, and much more. These groups fundamentally do the work of POD year in and year out. Yet there are a number of committees that may figure less prominently in many members’ consciousness, for example, the Finance Committee, the Governance Committee, and the Nominations and Elections Committee, to name just three, though their work is by no means less valuable for its relative invisibility.

Another that may be unfamiliar is the Outreach Committee, which has been quiet for a number of years, but is poised to reemerge in order to attend to some of the major goals enumerated in [POD’s 2013-2018 Strategic Plan](https://sites.google.com/a/podnetwork.org/wikipodia/pod-network-news-page/pod-network-news-archives/fall-2014). As its name suggests, the committee is devoted to outreach that, according to its charge, will “promote a strong and representative national and international membership in POD and...cultivate good working relationships and informational exchanges between POD and other organizations with similar missions.” The committee will help POD reach toward its vision “for all institutions of higher education to value, promote, and reward teaching as a core scholarly activity that is informed by research and reflection and which results in deep learning for all students.” Three subcommittees will take on different elements of this outreach work: a regional organizations and special interest groups subcommittee to connect POD with the wide range of regional and state groups that have emerged over the past decades in the U.S. and Canada—and that will link those groups with each other; a national organizations subcommittee that will work to clarify and cultivate relationships and collaborations with other national organizations that share similar missions and interests; and an international subcommittee that will identify the goals of international outreach and collaborations.

From interviews POD Historian Dakin Burdick has conducted with many early members and some of the co-founders of the organization, it’s clear that POD began modestly, and it has served its members well over time as it has continued to grow and develop. One of those early leaders, and the fourth president of the organization, Lance Buhl, Deputy Director of the Center for Leadership and Public Values at Duke University, commented in an [interview](https://sites.google.com/a/podnetwork.org/wikipodia/pod-network-news-page/pod-network-news-archives/fall-2014) in the winter 2012 newsletter:
I’m really quite encouraged that POD has grown so much, with so many members, representing such a broad array of institutions, not only here but internationally. We never imagined 40 years ago that it would grow as much as it has. When we started to think about it, we had maybe 30 or 40 folks in the room. As I skim each year To Improve the Academy, and see just how many folks are engaged in thinking creatively about serving the learning process, I find many reasons for optimism. So, I’m hoping POD is an influential force for reform of higher education.

Strategically, it is time to move forward, taking a leadership role in reaching outward to make a stronger and wider contribution to higher education.

One way to leverage our efforts is through targeted collaborations. In Creating the Future of Faculty Development: Learning from the Past, Understanding the Present (Sorcinelli, Austin, Eddy, & Beach, 2006), the authors argue that we have now moved in educational development from what was once the age of the scholar through the ages of the teacher, the developer, and the learner to the age of the network. While POD itself is already an extensive network, it is also a potential partner in a series of other networks—regional, national, and international—that can benefit by joining forces. Cultivating partnerships on many levels will be the work of the Outreach Committee, and the time is ripe for the range of collaborations this work will entail, as just three of many possible examples demonstrate:

- **Regional:** The number of active state, provincial, and regional groups that regularly engage in development activities throughout the year in the U.S. and Canada is growing. As we move forward, I would ask POD members to entertain a couple of questions: How might these groups be connected and learn from one another? What role might POD play in facilitating synergy among them? What might they contribute to POD?

- **National:** In preparation for the call for proposals for the 2014 POD Conference, there emerged an informal virtual “network” of faculty developers on campuses that have been awarded NSF WIDER (National Science Foundation’s Widening Implementation and Demonstration of Evidence-Based Reforms) grants. With the recognition that so many POD members were deeply involved with NSF projects, and in light of other recent calls for enhanced educational development efforts in undergraduate education (especially in STEM disciplines), it is clear that POD has a potentially powerful role to play as a partner with other major organizations. As we discover new opportunities to partner with others committed to promoting deep and significant student learning, we might do well to consider: How can POD share the expertise emerging from several decades of educational development work with other influential organizations? Which organizations and initiatives should we prioritize? And how might we be stretched and challenged through the experience?

- **International:** POD has been involved with ICED, the International Consortium for Educational Development (founded in 1993) for over two decades, and though POD has long had a seat on the Council, with Kathryn Plank’s election this year as Vice President of ICED, a POD member will serve as an officer of this premier international organization for the first time. In addition, in 2018, the bi-annual ICED Conference will be held for the second time in the U.S., in Atlanta, under the leadership of POD member and former president Michele DiPietro. As we engage in more international scholarly connections and educational development collaborations, we might ask ourselves: What role are we prepared to take on as we engage more deeply with the international community of educational development? How can we learn and grow as an organization through international collaborations?

While in many ways it is an unsettling time of change, even disruption, for higher education, and consequently also for our work in educational development, it is also a time of great potential and new opportunities. One prospect close to home is the chance to participate in charting the course for one of these subcommittees. If you are interested to know more and
possibly to participate, please contact me or a member of the Core Committee.

-- Leslie Orquist-Ahrens

References:

Notes from the POD Office (Fall 2014)

It’s conference registration time. If you haven’t yet registered for the conference (November 5-9), please do so soon. The early-bird rate of $465 is in effect until October 4. Also, hotel rooms tend to go quickly, so please be sure to reserve a hotel room at the Intercontinental Dallas as soon as possible. All pertinent information is available here.

If you attend the conference, you may want to consider staying for Sunday. We have an exciting anchor session planned for Sunday morning entitled “Leveraging our Collective Experience: Reflections from Long-Time Faculty Developers,” facilitated by Deborah DeZure, Alan Kalish, Matt Kaplan, and Mathew Ouellett, from 8:30-10:00AM. After the anchor session, we’ll be offering a Grapevine Vintage Railroad Tour as a post-conference excursion from 12:00-7:00PM for $60. More information can be found here.

Hoag Holmgren
Executive Director
POD Network
Call for Core Self-Nominations (Fall 2014)

POD members who have been members for at least three years are invited to submit their name as a candidate to the POD Core Committee. The Core Committee is the primary governing body of POD and functions as its board of directors. Each member serves for a period of three years, beginning in the fall after the Core Committee election has occurred. Members are expected to attend all of the six meetings that occur during their term plus the spring Core meeting in March 2015 (dates TBD), for a grand total of seven Core meetings.

To nominate yourself, send your candidate's statement to the POD office at podoffice@podnetwork.org with "Core Self-Nomination" in the subject line. Statements must be received by Friday, November 21, 2014. The election is held online in December and new Core members are announced in January. Your statement should include:

- Name, title, and institution;
- Background in professional and organizational development; and
- Response to the question: What would you like to see POD accomplish over the next three years?

Statement should not exceed 750 words. Contact the POD office or the chair of the POD Nominations and Elections Committee, Past President Kathryn Plank, kplank@otterbein.edu, with any questions.
Call for Core Self-Nominations (Fall 2014) - WikiPODia

POD Essays on Teaching Excellence
edited by Emily Gravett

Member News
edited by Emily Gravett

Committee Updates
edited by Emily Gravett

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The POD 2014 Conference – Leverage is coming together with many exciting additions! The Conference Team is working hard to put together a great event that will offer attendees lots of good food for thought (and lots of fun too!).

Dr. Cathy Davidson, co-founder of HASTAC (Humanities, Arts, Sciences and Technology Collaboratory), and author of Now You See It: How the Brain Science of Attention will Transform the Way We Live, Work, and Learn, will lead us in a keynote address on Friday morning entitled “Learning to Learn.”

Drs. Deb DeZure, Alan Kalish, Matt Kaplan, and Matt Ouellet will help us round out the conference on Sunday morning with a great discussion-based anchor session: “Leveraging our Collective Experience: Reflections from Long-Time Faculty Developers and Participants.”

The ECRC (Electronic Communications and Resources Committee) has also worked tirelessly with Hoag Holmgren, POD’s Executive Director, to help get the new POD website and Registration page up and running. There have been a lot of changes this year, so thanks go out to this amazing POD Network of colleagues for their patience and flexibility with the process!

In addition, the Conference Team is looking forward to the introduction of POD-U, or the POD Unconference, which will offer conference participants several opportunities to engage in peer-to-peer learning, collaborative activities, and creative experiences. POD-U will be a largely participant-driven track, allowing attendees to decide what topics and discussions take place. Some wonderful Birds of a Feather Discussions will be a part of POD-U this year! If you have any questions or ideas about POD-U, please contact Patty Payette, our POD-U Coordinator, or any member of the Conference Team. In the meantime, be on the lookout for more details as the conference approaches.

Just so you don’t forget, the 2014 POD Conference will be held November 5-9, 2014 at the Intercontinental Dallas in Dallas, Texas. Click here for more information about the session types, pre-conference workshops, excursions, and hotel/transportation information. To register for the conference, click here.
We look forward to seeing you in Dallas!

Allison Boye, Conference Co-Chair
Jake Glover, Conference Co-Chair
David Sacks, Program Co-Chair
Bill Watson, Program Co-Chair
The Diversity Committee is turning 20!

To honor this important milestone and to build upon our legacy, we invite all members to participate in the Diversity Committee’s POD-sponsored session to be held at the upcoming conference in Dallas, Texas, at 3:15pm on Saturday, November 8, 2014.

While POD has long taken questions of diversity very seriously, contemporary trends in higher education continue to challenge us to redefine what diversity means on our campuses and to carefully consider the role of educational developers in fostering diversity and inclusion. At the beginning of the session, representatives from the POD Diversity Committee will commemorate the 20th anniversary by sharing some of the committee’s past. Then, we will facilitate a world café-style conversation for participants to discuss the following questions about our present work:

- What are contemporary issues related to diversity and inclusion on our campuses/in our organizations?
- What does it mean to do diversity and inclusion work in our field, and why is it an important issue?
- What are the barriers educational developers face in working to support diversity and inclusion?
- What are some institutional, national, and/or international models for successful diversity- and inclusion-related educational development work?
- What are the roles of POD, Teaching and Learning Centers, and instructors in moving the diversity and inclusion agenda forward in higher education?

In addition to generating immediate ideas for those in attendance, the Diversity Committee’s intention is to use this roundtable to begin a crowd-sourced toolkit of strategies for educational developers working on diversity and inclusion at their home institutions. Information about how to contribute to the toolkit (even if you’re unable to join us in Dallas) will be available on the Diversity Committee’s WikiPODia site.

To learn more about this initiative or how you can contribute, please contact Dr. Lindsay Bernhagen at bernhagen.1@osu.edu.

What's New in the Diversity-Related Educational Development Arena?
Come hear from, and interact with, this year's Donald H. Wulff Diversity Travel Fellowship recipients at the Resource Fair at 5:15pm on Friday, November 7, 2014, in Dallas, Texas.

We are honored to have these colleagues present their work and share their viewpoints in this interactive-meet-and-greet opportunity:

Kari Chancey & Colleagues, Oklahoma State University Institute of Technology
Mallory (Mel) Chua, University of Purdue
Tricia Elam Walker, Simmons College
Veta Goler, Spelman College
Denise Leonard, Washington University St. Louis
Audriana Stark, University of New Mexico
Tamika Tounsel, University of Michigan
Jennifer Staton

Also, congratulations to Stonehill College in Eaton, Massachusetts (application submitted by Dr. Stacy Grooters, Director for Teaching and Learning, and Assistant Professor in English), the 2014 recipients of the prestigious Educational Development Internship Grant.

For more information on the Donald H. Wulff Diversity Travel Fellowship or the Educational Development Internship Grant, please contact Dr. Pamela Roy at pamelatuliroy@gmail.com.
Member News (Fall 2014)

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Dr. Mathew L. Ouellett moved to Wayne State University (WSU) in Detroit, Michigan, in March 2013 to assume the roles of Associate Provost and Director of the Office for Teaching and Learning (OTL). Prior to WSU, Matt held leadership roles in faculty development at the University of Massachusetts Amherst, ranked in 2006 as one of the top four model teaching development programs in the U.S. and Canada. In August 2013, Dr. Sara Kacin was appointed OTL assistant director. Prior to this, Sara held positions in training and development in both higher education and industry. And, in November 2013, Dr. Carl Sorgen was appointed associate director. Most recently, Carl held positions in both institutional research and development.

(Pictured, from left to right: Sara Kacin, Matt Ouellett, and Carl Sorgen, June 2014)

Karen Thoms, Professor at St. Cloud State University has retired, effective May 11, 2014. Karen was on the steering committee that created the FCTE (Faculty Center for Teaching Excellence) at St. Cloud State and served as its director from 2000 to 2004. Since the creation of St. Cloud State’s Center (now the Center for Excellence in Teaching and Learning), Karen has conducted workshops, led book talks, assisted with consultations, and served in an advisory capacity as requested. Karen has attended the annual POD conference for many years and served as the newsletter editor for some of that time.
Journal Updates (Fall 2014)

POD Network News

Journal Updates (Fall 2014)

Research & Practice in Assessment (RPA) released its summer 2014 issue on Monday, June 30th. The summer issue showcases fresh approaches to higher education assessment with the aim of prompting readers to rethink traditional assumptions of effective assessment.

The articles included focus on qualitative methods and address issues that confront institutions today. Topics range from strategies for evaluating student learning to new approaches to program development. Two articles that may be of particular interest to POD are:

- **An Integrated Model of Influence: Use of Assessment Data in Higher Education** by Jessica L. Jonson, Tim Guetterman, and Robert J. Thompson, Jr.
- **Case Study: One Institution's Application of a Multiple Methods Assessment Framework** by Jacqueline N. Gustafson, Jessica R. Daniels, and Rachel J. Smulski

Both articles apply a qualitative framework to enhance the context of institutional data. Jonson, Guetterman, and Thompson call for a broader understanding of the ways in which assessment results are used for improvement, while Gustafson, Daniels and Smulski utilized multiple methods to examine how an institutional mission is being met. Read these articles by clicking the links above or the entire issue here.

I hope you and your members enjoy the contributions from all of the authors in this issue and I encourage you to share your thoughts and ideas about the scholarship via Facebook or Twitter (@RPAjournal).

RPA is an online journal dedicated to the advancement of scholarly discussion between researchers and practitioners in the evolving field of higher education assessment. For additional information on the Summer 2014 issue of the Research & Practice in Assessment (RPA) journal, please visit [www.rpajournal.com](http://www.rpajournal.com).

Lauren J. Germain, Ph.D., M.Ed.
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Fall 2014
Books by POD Members (Fall 2014)

INSIDE THIS ISSUE:

**Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time**
by Linda B. Nilson

Linda B. Nilson puts forward an innovative but practical and tested approach to grading that can demonstrably raise academic standards, motivate students, tie their achievement of learning outcomes to their course grades, save faculty time and stress, and provide the reliable gauge of student learning that the public and employers are looking for.

“This book will change your life! Every instructor should buy it now. Nilson shows us how to make grading easier, more logical, and more consonant with research on learning and motivation. A major advance in our thinking about how we grade and how students learn.” -- Barbara Walvoord

Linda B. Nilson, PhD, is founding director of the Office of Teaching Effectiveness and Innovation (OTEI) at Clemson University. She has also authored Teaching at Its Best, now in its third edition, The Graphic Syllabus and the Outcomes Map, and Creating Self-Regulated Learners: Strategies to Strengthen Students’ Self-Awareness and Learning Skills.

**Sanctioned Ignorance: The Politics of Knowledge Production and the Teaching of the Literatures of Canada**
by Paul Martin

“There is no such thing as ‘the ivory tower.’ Rather, there sit side by side numerous windowless towers of knowledge, each seeming to have only a small entrance and no discernable exit.” -- Paul Martin

A decade-long study of course-text selection patterns, Paul Martin’s Sanctioned Ignorance is a groundbreaking case study of the role played by university literature departments in the construction and perpetuation of the literatures of Canada. It is the Winner of the 2013 Gabrielle Roy Prize (English Section).
Why do Canada’s English-language universities devote, relatively speaking, so little attention to the study of the literatures of Canada? More important, why do English departments frequently portray “Canadian Literature” in a way that fails to encompass Canada’s rich multiplicity of literatures and the diverse experiences of its immigrants, long-term residents, and original peoples? Martin’s research—interviews with 94 professors in 27 universities—maps the institutional chasms in communication and the nature of their persistence. His own example of venturing out from his “tower” to converse with colleagues shows a way toward cultivating a conception of the literatures of Canada that is both expansive and inclusive. Canadianists, professors of English, French, Postcolonial and Comparative Literatures, and leaders in education will profit from Martin’s frank investigations.

Formerly an Assistant Professor of English and Director of the Canadian Studies Program at the University of Vermont, Paul Martin is now Faculty Development Co-ordinator at MacEwan University. He lives in Edmonton, Alberta, Canada.
New Summer Institute

Chapman University Expands Summer Institute for New Chapman Faculty to a Full Week

Three years ago, a center for teaching and learning was just one of many goals in Chapman University’s strategic plan. After both a successful planning year and a very well received inaugural year, the Chapman University Institute for Excellence in Teaching is expanding its Summer Institute for New Faculty.

The Chapman University Institute for Excellence in Teaching (IET) is the product of input from an advisory committee composed of faculty from each unit on campus. In the initial year, the primary focus of the IET was the new (and newer) faculty at the campus. In addition to the traditional procedural- and policy-focused “faculty orientation,” the IET sponsors a “Summer Institute” focusing on the pedagogical and instructional practices that contribute to Chapman’s emphasis on quality instruction and student-focused education. The feedback from the inaugural year’s participants indicated that the one-day event was not long enough, and the IET advisory committee listened.

This year’s voluntary Summer Institute for New Faculty has been expanded to five days and captures the mission of the IET: to promote the value and practice of excellent teaching that facilitates student learning.

Each day has a different theme, starting in Day One at the community and narrowing progressively down to the course and classroom environment. Day One covers the campus mission, “to provide personalized education of distinction that leads to inquiring, ethical and productive lives as global citizens,” and both the physical environment of the campus and the surrounding community of Orange, California. Like a POD conference, time is intentionally planned outside the workshop room and lunches provide time to network.

Day Two continues in the campus environment with discussion of campus policy on syllabi and moves into interface between campus policy, accreditation, and the course. Pedagogical theory and emphasis on active learning strategies, research-based instructional methods, and principles for the new faculty’s soon-to-be-presented courses are modeled in workshops throughout the day (in a structure modeled after POD’s Institute for New Faculty Developers). In Day Two, the new faculty participants are presented with a specific product goal (outcome) of the Summer Institute—to use their time, in and outside of the workshops, to develop their Fall term syllabi consistent with the theories and policies presented in the
workshops.

Days Three and Four focus on course and classroom environment and emphasize maximizing engagement and integration of technologies. Because Chapman offers a wide range of disciplines, from traditional liberal arts to pharmacy sciences, a wide range of strategies, techniques, and technologies will be presented throughout the Summer Institute. The presenters of the Summer Institute workshop sessions are the members of the IET advisory committee.

The final day focuses on a product outcome presented in Day Two—the sharing of their Chapman approved and formatted syllabus handout draft. The syllabi shared in Day Five is just one of the outcomes of the Summer Institute. Other outcomes include the new faculty's ability to:

- Identify and describe local non-academic and academic resources available in Orange and on campus
- Discuss and analyze how students learn
- Design instruction using the backward instructional design model
- Develop measurable student learning outcomes
- Develop appropriate assessment strategies that are aligned with student learning outcomes
- Design differentiated instructional strategies that maximize active learning
- Integrate multiple technologies into instruction
- Discuss and understand the role of diversity in teaching and learning
- Develop teaching strategies that promote critical thinking
- Integrate information literacy into instruction

The five days of programmed interaction with both IET committee members and new faculty members are designed to empower the new faculty with the conceptual and procedural knowledge to be successful. We also hope to foster a network of collegial support both with the IET and their peers.

As should be obvious, the Chapman University’s Summer Institute for New Faculty is strongly influenced by the experiences provided over the years by POD. Akin to experiences with the Institute for New Faculty Developers, POD conferences, and the POD Network in general, it is our goal to have our new faculty view Chapman’s IET as a knowledgeable, useful, and fun resource—one they will access and view as "my kind of people."

Daniel Flynn
Assistant Director, Institute for Excellence in Teaching

CHAPMAN UNIVERSITY
Toward the Best in the Academy Volume 20, Number 4, 2008-09

We continue to feature a selected POD Essay on Teaching Excellence in each issue of the POD Network News.

Non-Science for Majors: Reforming Courses, Programs, and Pedagogy

Jennifer Frederick, Yale University

Scientific advances fill news headlines and find audiences in popular movies, legislative bodies, and courtrooms, suggesting that society is broadly engaged by scientific issues. Science students typically learn concepts and methods that ignore the social and cultural foreground as well as religious and ethical implications of science practice. These excluded factors often reappear in scientific developments such as genetic engineering of herbicide-resistant plants, environmental effects of chemical and biological waste management strategies, and medical and health implications of sequencing the human genome. Though today's science professors are already burdened by expanded content from introductory to advanced courses, now more than ever we need scientists who are able to articulate non-scientific dimensions of their work and the pedagogical skill help students understand their significance.

To get to that point we will need broad-based changes in science education. This essay suggests transformation at course, program, and university-wide levels. The current focus on covering material, presenting facts, and guiding students through laboratory exercises with known outcomes produces able scientists. Yet this approach leaves students unprepared to reflect on the meaning of science and to understand its broader social and moral context. Changes to science pedagogy encouraged by this essay entail training students to understand scientists as social actors who should reflect on the larger context of their work. With such training, students will more ably communicate the powerful role of science and develop expanded ability to work in interdisciplinary teams. Moreover, exploring the underlying assumptions of scientific inquiry will heighten their respect for the limits—and power—of scientific inquiry. In short, they will be better scientists.

Course-Level Modifications

At the course level, the goal will be to promote broader social, cultural, religious, and ethical
awareness among science students. Science educators will benefit from rethinking course objectives in light of science’s societal context. Revised objectives might emphasize communication to non-scientists or exploring ethical issues. To accomplish this goal, other course elements (points made in lecture, assignments, exam questions) will need to be deliberately structured to help students see the social connections of science. Ideally, each element will be structured to facilitate assessing progress toward the larger goal. Example assignments include having students write a review of a significant scientific finding for a general audience, teach an experimental technique to non-scientists, or write an essay about their lab work with students from other cultural backgrounds. ‘Pre and post’ assessment strategies could measure students’ increasing awareness of social dimensions of science and their ability to communicate with non-scientists.

Laboratory settings provide another venue for introducing course level modifications. A significant body of literature suggests that inquiry-based laboratory exercises encourage students to think as scientists do and to discern the non-scientific context of their work. For example, as students learn to formulate research questions, teachers might call attention to questions that cannot be answered scientifically. Such ‘mistakes’ might well contain assumptions worth exploring. Encouraged to reflect, students will grasp the cultural ‘condition of the possibility’ of their science work. Other approaches to modifying lab courses require less deviation from established experimental training, but feature creative use of lab exercise ‘down time’. While a reaction stirs or an analytical gel runs, students might discuss issues that intersect with the experimental topic. For example, students studying chemical synthesis could discuss progress made in green chemistry and consider environmental and health impacts of chemicals they are studying.

Individual course modifications may be small or large. Recent reports of notable course design projects may serve to stimulate other creative approaches (Strobé & Strobé, 2007; Benore-Parsons, 2006). Using new criteria to evaluate students may yield surprising results. A chemistry student who struggles to write reaction mechanisms may possess excellent understanding of the environmental impact of chemical advances. Such a student might well be directed away from the research lab into a position involving science policy. Expanding the pool of scientists in this way will diversify the scientific community.

Program-Level Modifications

Program-level modifications have potential to impact a greater number of future scientists. The topic of ethics, a field that intersects frequently with scientific advances, provides an important example. Quite often, science students are not trained to formulate ethical arguments. As a default, they often rely on unarticulated assumptions of their familial or religious upbringing. In all likelihood helping students think ethically about science will require modifying program requirements. Indeed, many institutions are taking steps to integrate ethics into the undergraduate science education (Zaikowski & Garrett, 2004).

An approach that integrates science and non-science learning experiences better will require the support of advisors. Changes might be as simple as helping students choose courses complementary to their interests in science. On a larger scale, departments will need to rethink electives. Inspiring science students to take non-major courses seriously will likely require program modification. Science students ought to be afforded opportunity in their major to integrate learning from across the curriculum; if they are not, the work of intellectual integration will be outsourced to the philosophy and humanities departments. Program enrichment or modification should be guided by a strategic plan and program-level assessment strategy. Good intentions alone are not enough.

University-Level Modifications

Revising undergraduate science curricula has for some schools become a university-level endeavor. Globalization introduces significant complexity into this undertaking. Because science examines the natural substrate to culture—gravity is the same for the Hindu,
Buddhist, and Christian—science training frequently omits exploration of assumptions of science practice, including the role of fundamental beliefs (e.g., that the natural world exists and can be known) and values (e.g., that animals can make only restricted moral claims upon us). Yet globalization raises the likelihood that scientists will interact with people who see essential matters quite differently. Preparing graduates to engage these issues is an immense challenge for the future of science education, one that no department can meet without the university’s support.

Encouraging a thoroughgoing multi-disciplinary approach is one possibility. Instead of leaving convergence of disciplines to chance, curricula should be designed to facilitate and require disciplinary crosstalk. Not sequestering students by discipline will allow universities to promote better exchange of ideas. Science students might be encouraged to write articles for the school paper, organize public talks or debates, or tutor in a learning center.

The cost of this approach is significant. Because integrating critical but perhaps unfamiliar topics will be daunting for some faculty, institutions may need to support faculty with released time, teaching assistants, or curriculum development specialists. On a broader scale, institutions may wish to conduct scientific literacy assessments for all students. University-wide curricular projects such as ethics across the curriculum also might be used to further integrate learning experiences.

Costs and Benefits

Intentionally planning a modification at any level takes time, not just in course design and lesson planning, but also potentially in working with others and campaigning for changes. Where time is a chief concern, incremental changes can yield cumulative improvement. If one revised one or two items per term, an entire course could be reinvented in a few years. All sorts of transformation are resource intensive. Assessment is important, both as part of pedagogy and as a means of justifying costs. The triad of establishing course goals, managing the classroom and out-of-class learning environment, and performing assessment must be interconnected in order to assess whether a change is effective.

Many of the proposed changes involve asking a teacher to venture into an arena in which she or he is not an expert or that will require new teaching methods (e.g., case studies or classroom discussions about controversial issues). Some faculty resistance is likely. A large-scale strategic plan will need to support mechanisms for dealing with faculty concerns and challenges. Science practice contains a possible solution to resistance. If course redesign, program modification, or university transformation involves experts working toward a common goal, the parallels to scientific research may convince the holdouts.

Conclusions

To have a lasting effect, science education initiatives need to be supported at course, program, and university levels. That will require engaging faculty, departmental leadership, and administrators in conversation about curricular matters. As we push for transformations of increasing scale, we should bear in mind that the potential payout is tremendous: meaningfully educated scientists capable of understanding assumptions of their work and thus more able to converse with nonscientists. The next generation of scientists will seek solutions to global warming, environmental sustainability, and the humane use of science and technology. Let us train them well.

References


Jennifer Frederick (Ph.D., Yale University) is Associate Director, Science Education, in the McDougal Graduate Teaching Center at Yale University.
Contact the Editor (Fall 2014)

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POD Network News is published by the Professional and Organizational Development (POD) Network in Higher Education. Current members receive calls for content and notification of publication. Member contributions are encouraged and should be sent directly to the editor.

In 2014, Emily O. Gravett succeeded Amanda G. McKendree as the editor of POD Network News. She is also a member of the POD Small Colleges Committee and serves as Retention Chair to the POD Membership Committee. Emily joined the Collaborative for Learning and Teaching at Trinity University as Assistant Director of Programs in 2013, after working as a graduate student in the University of Virginia’s Teaching Resource Center for two years. While her focus at the Collaborative is on programming, such as creating and facilitating pedagogical workshops, she also works individually with faculty to support evidence-based course and assignment design. Her interests include student engagement, writing instruction, discussion-leading, and formative assessment, and she still teaches disciplinary courses, such as Religion and Film. She holds a B.A. in English and Religion from Colgate University and a M.A. and Ph.D. in Religious Studies from the University of Virginia.

Please direct any questions, comments, or ideas to egravett@trinity.edu. She greatly appreciates your feedback!