



PROJECT KALEIDOSCOPE
Teach. Lead. Know. Differently.

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STRATEGIC PLAN, 2017

“ . . . The liberal arts and sciences are key components in America’s ability to lead and innovate in the global economy and in the long-term effort to expand human freedom. Both in general education and in work on arts and sciences majors, AAC&U will foreground ways of teaching these subjects—face-to-face, online, and in “real-world” contexts—that help students directly connect their liberal arts and sciences learning with challenging questions and issues, contemporary and enduring . . . ”

– from the AAC&U Strategic Plan

INTRODUCTION

The national imperative to produce more STEM baccalaureates, particularly among those from underrepresented groups, has directed the nation’s attention toward gaining a deeper understanding of “what works” in undergraduate STEM teaching and learning. Increasingly, such emerging and persistent trends in higher education – along with the rich organizational legacy of Project Kaleidoscope (PKAL) – are contributing to the potential of AAC&U to significantly influence STEM higher education reform.

AAC&U has already made important contributions to “what works” in undergraduate education for underserved students; and its PKAL has made equally important contributions to “what works” in undergraduate STEM teaching and learning. Further, two national STEM funding opportunities have been grounded in AAC&U’s LEAP initiative and its mission of inclusive excellence. These are: 1) the NSF Solicitation:13-552 (2013), which references LEAP as a major effort in higher education that is aligned with NSF’s goal of improving education practice at the undergraduate level; and 2) the Howard Hughes Medical Institute (HHMI) Inclusive Excellence Program (2015), which calls for four-year institutions to increase their institutional capacity for meaningful inclusion of students from all backgrounds in STEM.

Additionally, AAC&U has long been recognized and respected as a national leader in promoting liberal education. Indeed, if students are to be prepared to solve the highly complex problems of our day, they must gain a sophisticated level of understanding of core principles of STEM disciplines, as well as their applications to real world problems. However, common misperceptions, particularly among STEM academicians, have resulted in marginalization of the tenets of liberal education and relevant AAC&U initiatives, and left them to be wrongfully viewed as: separate and distinct from the STEM disciplines, irrelevant to national STEM higher education reform efforts, and inapplicable to core undergraduate STEM content. These

misperceptions categorically ignore the fact that liberal education, since its origins in ancient times, has always emphasized mathematics and the sciences.

AAC&U, through its PKAL, is uniquely poised to not only correct these misperceptions, but also assume a position of national leadership and prominence in STEM higher education reform as a result. To that end, AAC&U will leverage the historical and contemporary commitments of PKAL – and its ongoing signature programs, externally funded projects, and planned initiatives – to reform STEM higher education through more holistic approaches that fully *consider not only “what works,” but also “for whom” and under what conditions it works best.*

MISSION

Project Kaleidoscope has as its mission to empower all US college and university STEM faculty – through a robust community of practice framework – to competitively train and liberally educate *every* STEM undergraduate.

VISION

Project Kaleidoscope will lead the nation in catalyzing the reform of undergraduate STEM teaching and accelerate the widespread uptake and adoption thereof.

VALUES

Consistent with the strategic plan of AAC&U, Project Kaleidoscope values: liberal education as a global necessity (LEAP), 21st century markers of the value of US undergraduate STEM degrees (QUALITY), inclusive excellence (EQUITY), and integrative liberal learning for the global commons (SOCIAL RESPONSIBILITY).

Additionally, as the center for the reform of undergraduate STEM education within AAC&U, we value:

- Core undergraduate STEM teaching and learning that is deeply rooted in the traditions of a liberal education.
- Evidence-based approaches to professional development for STEM faculty that honor, and are appropriately grounded within, the complex relationships that exist between and among institutional contexts, professional aspirations, and personal perspectives.
- Excellence in undergraduate STEM teaching that is evidence-based, interactive, inclusive, and culturally sensitive and responsive.

- Courageous leadership that embraces diverse perspectives with authenticity and legitimacy.
- Effectiveness in leadership development for STEM faculty that is intentionally introspective, reflective, and holistic in approach.
- Communities of practice that support and energize the development of a national platform for expanding the STEM higher education reform knowledge base.

GOALS

GOAL 1: Position AAC&U as a national leader in US STEM Higher Education Reform through clear, contemporary, and capacious frameworks for STEM faculty professional development

Since its founding, the signature programs and externally funded initiatives of PKAL have always honored the inextricable link between the professional development of STEM faculty and student achievement. More recently, Leiserson & McVinney (2015) also noted that meaningful professional development can provide STEM faculty with the capacity to mitigate those unproductive issues and unnecessary conflicts that often derail implementation of advanced pedagogical initiatives. To that end, Project Kaleidoscope will build upon its legacy of success in developing and disseminating theories and effective practices for STEM faculty professional development.

Strategies

- Develop and disseminate new resources, tools and evidence-based practices for quality undergraduate STEM teaching
- Build the infrastructure for leading and sustaining a national network of regional communities and meetings that provide opportunities for STEM faculty to be exposed to cutting-edge advances in undergraduate STEM teaching
- Foster and support the short- and long-term leadership development of STEM faculty
- Cultivate and sustain new paradigms of professional development for undergraduate STEM faculty through externally funded programs and projects
- Develop and/or define theoretical frameworks and baseline parameters for the ongoing assessment and evaluation of PKAL professional development efforts

Evaluation Indicators

In an effort to evaluate the overall impact of its STEM faculty professional development activity, PKAL will:

- Track the direct and indirect impact of its leadership development programs on STEM faculty participants;
 - Apply for and/or maintain streams of revenue that support STEM faculty professional development activities; and
 - Track the publications, trademarks, and presentations related to STEM faculty professional development activity.
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GOAL 2: Accelerate broad-scale systemic innovation to advance culturally relevant educational practices within STEM core curricula that engage historically marginalized students and challenge prevailing beliefs that foster inequities.

For more than twenty years, national reports have called for higher education to transform its STEM learning environments. Indeed, PKAL has been a leader in responding to these calls by advancing “what works in STEM higher education” – emphasizing more highly engaged pedagogies, re-designed learning spaces, faculty development, leadership capacity building, and network creation that accelerates the uptake and/or adaptation of evidence based undergraduate STEM teaching practices. However, demographic shifts in the undergraduate population now rely upon more robust efforts that embrace inclusive excellence as a core component of undergraduate STEM reform.

Strategies

- Build a national consciousness and awareness of the complex systems of oppression that exist within higher education
- Develop and disseminate more radical resources, tools and evidence-based practices for implementing culturally relevant teaching in the undergraduate STEM disciplines
- Promote the meaningful inclusion of STEM faculty from diverse backgrounds and institutions in all national PKAL higher education reform efforts
- Support STEM faculty in implementing best practices for inclusive learning environments.

Evaluation Indicators

In an effort to evaluate the overall impact of its contribution to inclusive excellence in STEM higher education, PKAL will:

- Track the progress and vitality of online dissemination repositories related to inclusive excellence in STEM higher education reform;
 - Track and report the increases in diversity of STEM faculty participants; and
 - Track the OUSE publications and presentations related to achieving inclusive excellence in STEM.
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GOAL 3: Foster and advance national advocacy campaigns for holistic undergraduate STEM reform.

While remarkable progress has already been made in successfully implementing quality teaching methods in STEM at the undergraduate level – both curricular and co-curricular – and in demonstrating their capacity to impart essential critical-thinking and problem-solving skills, student access and exposure to these modern STEM teaching strategies continues to vary significantly across all of higher education. This is believed to be due, in part, to ineffective advocacy campaigns that only minimally expose STEM reform stakeholders to cutting edge research approaches, and/or marginalize STEM reform practitioners from ongoing national discourse related to STEM education research.

Project Kaleidoscope is uniquely poised to leverage its academic brokering power to broadly advocate for advances in undergraduate STEM teaching. By facilitating meaningful exchanges of information between and among intellectual communities of STEM disciplinary faculty practitioners, social scientists, discipline-based educational researchers, and non-academics, PKAL can more effectively translate common ways of knowing and understanding *what works* into the kind of empirical measurements that are needed for documenting effective STEM teaching practices.

Strategies

- Position STEM faculty for national advocacy for STEM higher education reform through innovations in the AAC&U STEM Conference and other PKAL meetings and conferences
- Expand and maintain a virtual community of practice committed to improving undergraduate STEM teaching

- Develop, nurture, and maintain vigorous partnerships with government agencies, federal and private funding agencies, and STEM disciplinary societies that are committed to advancing quality undergraduate STEM teaching

Evaluation Indicators

In an effort to evaluate the overall impact of its contribution to inclusive excellence in STEM higher education, the Office of Undergraduate STEM Education will:

- Track the funding/non-funding outcomes of funding agency partnerships;
 - Track the outcomes of responses to national calls for action related to undergraduate STEM reform; and
 - Continually analyze online traffic to STEM Central and the STEM Education webpage of the AAC&U website.
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