Bibliography to Inform COSEE's Activities Related to Broadening Participation

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This bibliography provides an overview of resources (organizations, policy documents, research studies, intervention studies, etc.) that relate to broadening participation in the sciences. Resources are organized into the following sections:

Relevant Organizations & Web Resources

AAAS Center for Advancing Science and Engineering Capacity

http://php.aaas.org/programs/centers/capacity/

The Center provides institutions of higher education with assistance in achieving their educational mission in STEM fields. Drs. Shirley Malcom and Daryl Chubin and a large supporting cast of consultants at the Center are experts on diversity and capacity building to address the problem of under-representation. In addition to human resource development consulting, resources on the website include presentations, conferences and a catalog of policy-related research and insights.

BEST: Building Engineering and Science Talent

http://www.bestworkforce.org/publications.htm

BEST applies knowledge of program effectiveness in science, technology, engineering, and mathematics to support efforts to build capacity at the local, state, and federal levels. A variety of publications and reports are available, including: (1) What it Takes: Pre-K-12 Design Principles to Broaden Participation in Science, Technology, Engineering and Mathematics"; (2) A Bridge for All: Higher Education Design Principles to Broaden Participation in Science, Technology, Engineering and Mathematics; (3) The Talent Imperative: Diversifying America's Science and Engineering Workforce; (4) Quiet Crisis: Falling Short in Producing American Scientific and Technical Talent

Center for Research on Education, Diversity & Excellence (CREDE) Bibliography

http://crede.berkeley.edu/products/print/books.html

This bibliography lists books either written by or recommended by CREDE researchers. Books are grouped by topic: language learning and academic achievement; professional development for diversity; schools, families and community; instruction; school reform; and assessment.

LIFE Center Diversity Panel: Consensus Report & Presentations

http://life-slc.org/panel/

Learning in Informal and Formal Environments (LIFE) Center convened two panel events to understand and take into account different forms of learning supported in various contexts, activities, and cultures. Video of the presentations are available on the website, as well as the LIFE Center consensus report, "Learning In and Out of School in Diverse Environments: Life-Long, Life-Wide, and Life-Deep" for download or hardcopy purchase.

NOAA Expanding Opportunities Conference in Oceanic and Atmospheric Sciences – Inclusion, Innovation and Investment (April 2001, February 2003)

The conferences addressed building institutional capacity; sustaining partnerships between the public and private

sectors; and exchanging scientific information among NOAA and the minority-serving institution (MSI) community.

NOAA Educational Partnership Program

http://www.epp.noaa.gov/

The goal of NOAA's Educational Partnership Program is to increase the number of students from underrepresented communities who are educated, trained and graduated in fields that directly support NOAA's mission.

Understanding Interventions that Broaden Participation in Research Careers. Annual Conference, 2007-2009.

http://www.understandinginterventions.org

This conference brings together researchers who are looking at increasing minority participation in the STEM research pipeline and careers. Conference reports and a 2007 workshop summary of methodological approaches are available. Daryl Chubin is vice chair of this group of social scientists, educational researchers and STEM practitioners.

NSF Science and Engineering Indicators

http://www.nsf.gov/statistics/indicators/

Science and Engineering Indicators, published by the National Science Board, provides a broad base of quantitative information on the U.S. and international science and engineering enterprise. Statistical categories include education at the various levels, labor force, trends in research and development, public attitudes and understanding, and state statistics, and are updated annually.

Quality Education for Minorities Network

http://www.qem.org/

The Quality Education for Minorities (QEM) Network is a non-profit organization based in Washington, DC, dedicated to improving the education of African Americans, Alaska Natives, American Indians, Mexican Americans, and Puerto Ricans. Millions of dollars, now spent for remedial purposes, could be made available for the educational benefit of all children and youth by improving the quality of education available to the groups targeted by QEM. Quality education for minorities improves the quality of education for all.

NSF 2009 Joint Area Meeting

http://www.nsf.gov/events/event_summ.jsp?cntn_id=112343&org=HRD

The NSF Division of Human Resource Development (HRD) within the Directorate for Education and Human Resources announces its 2009 Joint Annual Meeting (JAM), to be held at the Omni Shoreham Hotel in Washington, DC from June 8th to 11th, 2009. HRD is pleased to welcome the NSF's Directorate for Biological Sciences (BIO) as a co-sponsor for JAM09. Each year, HRD grantees gather in Washington, DC to discuss, present, network, leverage expertise, and create connections to the many other research and education projects funded within the division.

Institute for Broadening Participation

http://www.ibparticipation.org/

The Institute for Broadening Participation (IBP) is a non-profit organization created to design and implement strategies to increase access to STEM (Science, Technology, Engineering, and Mathematics) education and careers for diverse underrepresented groups. IBP's Mission is to (a) make education and careers in science more accessible to students - particularly to members of underrepresented groups, (b) support faculty and administrators as they work to include students from a variety of backgrounds in their programs, and (c) foster an on-going exchange of ideas and resources between individuals and institutions who are working to navigate their future in the STEM fields.

NSF Broadening Participation Resources

http://www.nsf.gov/od/broadeningparticipation/bp.jsp

Summarizes resources associated with NSF's commitment to broadening participation is embedded in its Strategic Plan through a variety of investment priorities related to the Learning and Stewardship strategic outcome goals.

American Evaluation Association: Guiding Principles for Evaluators.

http://www.eval.org/

AEA is an international professional association of evaluators devoted to the application and exploration of program evaluation, personnel evaluation, technology, and many other forms of evaluation. Evaluation involves assessing the strengths and weaknesses of programs, policies, personnel, products, and organizations to improve their effectiveness. Resources include conferences, bibliographies, and network of consultants.

Research Literature

Demographic Patterns of Diversity in the Sciences & Higher Education

Notable resources:

Allen, W. R. (1992). The color of success: African-American college student outcomes at predominantly white and historically black public colleges and universities. *Harvard Educational Review*, *62*(1), 26-45.

Data from survey of 872 African-American students at predominantly white colleges and 928 at historically black colleges suggest that academic achievement is highest for students who have higher educational aspirations, positive faculty relationships, confidence in their college choice. Beyond individual characteristics, academic performance is affected by such factors as campus quality of life, racial relations, social support networks.

Czujko, R., R. Ivie and J. H. Stith. (2008) Untapped Talent: The African American Presence in Physics and the Geosciences. *American Institute of Physics Report*. Pub. R-444. pages i-22 (Sept. 2008).

This paper presents data covering the representation of African Americans among physics and geoscience degree recipients at each stage of the educational system. The data were collected by several statistical agencies. This paper presents a snapshot of the supply side of physics and the geosciences and places the education of African American physicists and geoscientists within the larger context of the educational system and social structural barriers some students must circumvent. The paper identifies institutions that have reduced or removed these barriers, highlights striking contributions of Historically Black Colleges and Universities (HBCUs) in supplying the scientific workforce of African Americans, lists departments that have been successful in attracting and retaining African American students, to use as role models. See page 11 in particular for a Table on BS granting departments in the geosciences at HBCUs.

Hanson, S.L. (2007). Success in science among young African American women: The role of minority families. *Journal of Family Issues*, *28*, 3-33.

A conceptual framework that integrates critical gender theory and a multicultural approach is used to examine young African American women's experiences in high school science. Quantitative and qualitative data are used to explore the family's role in the science attainment process. Findings show that these young women feel less welcome in science than do young White women. However, their interest and involvement in science persist because of the family. Both mother's and father's influence is important. Although family variables are associated with success in science in the quantitative data, not all young women acknowledge or verbalize their awareness of this influence in the qualitative data. Instead, the young women often see their actions as independent.

Additional Resources:

Bingham, B. L., S. D. Sulkin, S. S. Strom, and G. Muller-Parker. (2003). Increasing diversity in the marine sciences through the minorities in marine science undergraduate program. *Journal of Geoscience Education*, *51*(5):474-480.

Culotta, E. (Ed.). (1993). Minorities in science: Changing the face of science [Special Section]. *Science*, 262, p. 1089-1136.

Hale, J. E. (2001). *Learning While Black: Creating Educational Excellence for African American Children*. Baltimore: Johns Hopkins University Press.

Hanson, S. L. (1996). Gender, family resources, and success in science. *Journal of Family Issues*, *17*(1), 83-113.

Gallagher, B. J., & Schmidt, W. H. (1997). *A peacock in the land of penguins: A tale of diversity and discovery*. San Francisco: Berrett-Koehler.

Olson, K. (1999). Despite increases, women and minorities still underrepresented in undergraduate and graduate science and engineering education. *Data Brief: NSF 99-320*, Washington, D.C.: National Science Foundation.

Demographic statistics for undergraduate and graduate degrees awarded to women and minorities in the United States in 1995, with trend data from 1985-1995.

How People Learn in Diverse Communities

Banks, J. A., Au, K. H., Ball, A. F., Bell, P., Gordon, E. W., Gutierrez, K., et al. (2007). *Learning in and out of school in diverse environments: Life-Long, Life-Wide, Life-Deep*. Seattle, WA: Center for Multicultural Education.

The major assumption of this consensus report is that if educators make use of the informal learning that occurs in the homes and communities of students, the achievement gap between marginalized students and mainstream students can be reduced. A cultural approach to learning recognizes, respects and mobilizes the range of experience, knowledge, cultural practices, languages, and community sources of support that people bring from their varied socio-economic and historical contexts. It focuses on four principles as underpinnings for Life-long (acquisition of fundamental behaviors and real-world information), Life-wide (breadth of experience), and Life-deep (embraces religious, moral, ethical, social values and judgment; language is key here) learning concepts. These principles explore why these concepts should be used in schools and across other educational organizations.

Barnhardt, R., & Kawagley, A. (2005). Indigenous Knowledge Systems and Alaska Native Ways of Knowing. *Anthropology and Education Quarterly, 36*(1), 8-23.

This article seeks to extend our understanding of the learning processes that occur within and at the intersection of diverse world views and knowledge systems, drawing on experiences derived from across Fourth World contexts, with an emphasis on the Alaska context in particular. Problem/challenge in engaging students of Indigenous societies is their aversion to an alien institutional culture. The curricula, teaching methodologies, and assessment strategies need to be based on a worldview that adequately recognizes or appreciates the worldview of the population (e.g., notions of an interdependent universe and the importance of place in their societies). Necessary to devise a system of education for all people that respects the epistemological and pedagogical foundations provided by Indigenous as well as Western cultural traditions, identifying common ground between the two knowledge systems.

Bell, P., Lewenstein, B., Shouse, A., & Feder, M. (eds.) (2009). Diversity and Equity. In Learning Science in Informal Environments: People, Places and Pursuits (pp. 209-247). Washington, DC: National Academy Press.

This chapter argues that participation and achievement in science are mediated by a complex set of sociocultural and systemic factors not often recognized in science equity efforts. A synthesis of four commonly researched groups (gender, Native American, people with disabilities, urban and rural environments) illustrate common themes that underlie the experiences of individuals with varied cultural and historical backgrounds. Outreach programs and designed spaces environments should be developed in ways that expressly draw upon participants' cultural practices, including everyday language, linguistic practices, and common cultural experiences. Members of diverse cultural groups can play a critical role in the development and implementation of programs, serving as designers, advisers, front-line educators, and evaluators of such efforts.

Gutiérrez, K., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher, 22*(5), 19-25.

This article addresses a challenge faced by those who study cultural variation in approaches to learning: how to characterize regularities of individuals' approaches according to their cultural background. By focusing on the varied ways people participate in their community's activities, we can move away from the tendency to conflate ethnicity with culture, with assignment to ethnic groups made on the basis of immutable and often stable characteristics. A cultural-historical approach focuses researchers' and practitioners' attention on variations in individuals' and groups' histories of engagement in cultural practices because the variations reside not as traits of individuals or collections of individuals, but as proclivities of people with certain histories of engagement with specific cultural activities. Thus, individuals' and groups' experience in activities—not their traits—becomes the focus.

Lee, C. D. (2008). The centrality of culture to the scientific study of learning and development: How an ecological framework in education research facilitates civic responsibility. *Educational Researcher, 37*(5), 267-279.

This paper argues that to generate robust and generative theories of human learning and development, researchers must address the range of diversity within human cultural communities, in cognitive, social, physical and biological dimensions, in other words, creating an ecological focus. The article theorizes the relationship between culture and learning in terms of the underlying mechanisms that help to explain how culture operates both to facilitate and to constrain learning. Theories of learning must help us to understand the ways that identity is linked to goal setting and persistence; the ways that competence is very much context dependent; how the exercise of power and the availability of resources can affect opportunity to learn; and how socialization efforts can help youth learn to make sense of and resist those institutional structures and practices that constrain and impede their opportunities to learn. Attention to the meaning of cultural practices within particular communities is crucial so that we are not imposing normative assumptions that have no meaning for the people we are studying.

Nasir, N. S., Rosebery, A. S., Warren, B., & Lee, C. D. (2006). Learning as a cultural process: Achieving equity through diversity. In K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences (1st ed.)* (pp. 489-504). Cambridge: Cambridge University Press.

In this chapter, the authors argue that learning and teaching are fundamentally cultural processes, in which learning and development consists of diverse repertoires of overlapping, complementary or even conflicting cultural practices. A cultural view of learning encompasses adaptive expertise involving the development of flexible knowledge and dispositions that facilitate effective navigation across varied settings and tasks. An expanded view of what counts as scientific thinking and activity – including use of embodied imagining, argumentation, and metaphor for the purposes of theorizing and knowledge building, allows us to see robust, authentic connections between the everyday knowledge and practices of youth from non-dominant groups and those of academic disciplines. We must look beyond the typical connections made in school curricula and identify important continuities of practice. The paper examines characteristics of learning as people go about everyday lives, the specific ways these varies repertoires of practice connect with academic practices and how these repertoires can be recruited in educational opportunities and designs.

Culturally Responsive Science Instruction— Effective Approaches to Educational Design

Notable Resources:

Aikenhead. (2005). *Science Education for Everyday Life: Evidence-based Practice*. New York, NY: Teacher's College Press.

This book provides a comprehensive overview of humanistic approaches to science, approaches that connect students to broader human concerns in their everyday life and culture. Summarizes major worldwide historical findings, focuses on present thinking, and offers evidence in support of classroom practice. The text describes an approach to teaching science (grades 6-12) that animates students' self-identities covering curriculum policy, teaching materials, teacher orientations and teacher education, student learning, culture studies, and future research.

Barton, A. C., Ermer, J. L. & Burkett, T. A. (2003). *Teaching Science for Social Justice*. New York, NY: Teachers College Press.

How might science education reflect the values of a socially just and democratic society? An engaging look at several after-school science programs that have turned into community-building experiences. This book presents a combination of in-depth case studies and rigorous theory, this volume offers a series of teaching stories that describe inner city youth's practices of science.

Bouillion, L. M., & Gomez, L. M. (2001). Connecting School and Community with Science Learning: Real World Problems and School-Community Partnerships as Contextual Scaffolds. *Journal of Research in Science Teaching*, *38* (8), 878-98.

Explores a form of "connected science" in which real world problems and school-community partnerships are used as contextual scaffolds for bridging students' community-based knowledge and school-based knowledge as a way to provide all students opportunities for meaningful and intellectually challenging science learning. The potential of these scaffolds for connected science is examined through a case study in which a team of fifth-grade teachers used the student-identified problem of pollution along a nearby river as an interdisciplinary anchor for teaching science, math, language arts, and civics.

Sanchez-Casal, S. & MacDonald, A. A. (2009). *Identity In Education: Future of Minority Studies*. New York, NY: Palgrave Macmillan.

This edited volume explores the impact of social identity (race, class, gender, sexual orientation, religion and so on) on teaching and learning. Operating within a realist framework, the contributors to this volume (all of whom are minority scholars) consider ways to productively engage identity in the classroom and at the institutional level, as a means of working toward racial democracy in higher education. As realists, all authors in the volume hold the theoretical position that identities are both real and constructed, and that identities are always epistemically salient. Thus the book argues--from diverse disciplinary and educational contexts--that mobilizing identities in academia is a necessary part of progressive (antiracist, feminist, anticolonial) educators' efforts to transform knowledge-making, to establish critical access for minority students to higher education, and to create a more just and democratic society.

Lee, C. D. (2007). *Culture, Literacy, and Learning: Taking Bloom in the Midst of the Whirlwind*. New York, NY: Teachers College Press.

Although focused on literacy, this is a highly developed culturally responsive model for disciplinary learning grounded in detailed empirical research on learning. The Cultural Modeling Project, which she presents here, drew on competencies students already had in African American Vernacular English (AAVE) discourse and hip hop culture to tackle complex problems in the study of literature. Using descriptions from classrooms, she describes how AAVE supported student learning and reasoning; how students in turn responded to the reform initiative, and how teachers adapted the cultural framework to their curriculum.

Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice, 34*(3), 160-165.

Describes the centrality of culturally relevant pedagogy to academic success for minority students who are poorly served in public schools, discussing linkages between school and culture, examining the theoretical grounding of culturally relevant teaching in the context of a study of successful teachers of black students. Provides examples of culturally relevant teaching practices.

McIntyre, E., Rosebery, A., & Gonzalez, N. (Eds.). (2001). *Classroom Diversity: Connecting Curriculum to Students' Lives*. Portsmouth, NH: Heinemann.

These collected papers examine the sociocultural approach to curriculum design, which provides minority and working class students with instruction that puts their knowledge and experiences at the heart of learning. It presents the theoretical framework for linking students' lives with curriculum and specific strategies from teachers who have done so successfully. The stories show African American, Haitian American, Hispanic American, Native American, and rural white students in contextualized learning as they do reading, writing, mathematics, and science across the grades. All of the classrooms use students' household-based funds of knowledge as resources for school-based funds of knowledge, building bridges in nontraditional ways.

Warren, B., Ballenger, C., Ogonowski, M., Rosebery, A., & Hudicourt-Barnes, J. (2001). Rethinking

diversity in learning science: The logic of everyday language. *Journal of Research in Science Teaching, 38,* 529-552.

Offers a perspective on understanding the gap in science learning and achievement that separates low-income, ethnic minority children from more economically privileged students. Discusses how the relationship between everyday and scientific knowledge and ways of knowing has been conceptualized in the field of science education research. Considers two dominant perspectives, continuous and discontinuous relationships.

Additional Resources:

Ayers, W., Quinn, T., & Stovall, D. (Eds.). (2008). *Handbook of Social Justice in Education*. New York, NY: Routledge.

Ballenger, C. (1997). Social identities, moral narratives, scientific argumentation: Science talk in a bilingual classroom. *Language and Education, 11*(1), 1-13.

Gutiérrez, K. D. (2008). Developing a sociocritical literacy in the third space. *Reading Research Quarterly, 43*(2), 148-164.

Parsons, Eileen Carlton. Culturalized science instruction: Exploring its influence upon black and white students' achievement.

Rosebery, A., Warren, B., & Conant, F. (1992). Appropriating scientific discourse: Findings from language minority classrooms. *The Journal of the Learning Sciences, 2*(1), 61-94.

Roth, W. M., & Barton, A. C. (2004). *Rethinking scientific literacy*. New York, NY: Routledge.

Stephens, S. (2000). Handbook for Culturally Responsive Science Curriculum. Fairbanks, AK: Alaska Native Knowledge Network. Available online or in pdf: http://ankn.uaf.edu/publications/handbook/

Warren, B. & Rosebery, A. (1995). Equity in the future tense: Redefining relationships among teachers, students, and science in linguistic minority classrooms, In W. Secada, E. Fennema, & L. Adajian, (Eds.), *New Directions for Equity in Mathematics Education*, 289-328. New York: Cambridge University Press.

Programmatic Approaches to Broadening Participation in the Sciences

Notable resources:

Chandler, K. (2003). Multicultural Pathways to Ocean Sciences Education. Proceedings of the Charrette conducted in Spring 2003 by COSEE-SE.

Charette participants explored strategies to enhance academic attraction to the ocean sciences. They explored the possibilities of using the coastal heritage and other historically related issues as an additional strategy to introduce African American students to the ocean sciences field.

Gilligan, Matt and Cook, Sue. Marine education diversity, retention, and recruitment: A minority panel report. Prepared by the Southern Association of Marine Laboratories, October 2001. Transcript available from: http://www.mbl.edu/naml/

This panel discussion focused on strategies to increase minority participation at marine laboratories and in marine sciences. Panelists included: Dr. Benjamin Cuker, Hampton University; Dr. Brian Bingham, Western Washington University; Dr. Bradford Brown, NOAA Fisheries and President of the Miami-Dade chapter of the NAACP; Dr. Judith Vergun, Oregon State University; and Dr. Dionne Hoskins, NOAA Fisheries, Galveston and Savannah State University.

National Science Foundation. (2008). Broadening Participation at the National Science Foundation: A Framework for Action. Washington, D.C.: National Science Foundation.

Guidelines for NSF's drive to increasing diversity as related to proposal review criteria for intellectual merit and broader impacts. The report addresses strategies for diversifying the reviewer pool, training NSF staff and reviewers on broadening participation, enhancing accountability, communicating guidance and promising practices on broadening participation, and maintaining a portfolio of relevant programs.

Jolly, E., P. Campbell, L. Perlman. (2004). Engagement, capacity, and continuity: A trilogy for student success. GE Foundation. Available for free download: http://www.smm.org/ecc/

This report suggests ways to increase the number and diversity of those pursuing education and careers in science, technology, engineering and mathematics (STEM). The authors analyze why successful individual reform efforts have not led to broader increases in students achieving at high levels nor entering science and math oriented careers and identifies three components necessary to increase success in quantitative sciences: engagement, capacity and continuity.

Additional Resources:

Bridging the gap: Minorities in marine science (2000). Video R/T:14:23. SAML, ASLO, NSF. Marine Sciences Program, Savannah State University, Savannah, GA. AGI Minority Participation Program http://www.agiweb.org/education/mpp/ 2003 AGI Fall Semester Internship in Geoscience Education and Outreach.

Campbell, P. B., Jolly, E., Hoey, L., & Perlman, L. K. (2002). *Upping the Numbers: Using Research-Based Decision Making To Increase Diversity in the Quantitative Disciplines*. GE Foundation.

Claudio, L. (1997). Making more minority scientists. *Environmental Health Perspectives*, *105*(2):174-176.

Cuker, B. (2001). Steps to increasing minority participation in the aquatic sciences: Catching up with shifting demographics. *American Society of Limnology and Oceanography Bulletin*, *10*:17-21.

Cuker, B. (2001). Designing diversity in to COSEE programs: Inclusion of traditionally underrepresented groups in the ocean sciences. *The Journal of Marine Education*, *17*(2):26-29.

Cuker, B. (2005/2006). Programmatic approaches to building diversity in the ocean sciences. *Marine Technology Society Journal*, *39*(4):8-11.

Gilligan, M. R. (1996). Promoting diversity in the fisheries profession: The role of historically black colleges and universities, *Fisheries*, *21*:26-29.

Gilligan, Matt (2002, January). U.S. Commission on Ocean Policy Testimony. http://aslo.org/download/gilligan2000.pdf

Grandy, J. (1998). Persistence in science of high-ability minority students: Results of a longitudinal study. *Journal of Higher Education*, *69*(6):589-620.

Huang, G., Taddese, N., & Walter, E. (2000). Entry and persistence of women and minorities in college science and engineering education (NCES Pub. 2000601). National Center on Education Studies. http://nces.ed.gov/pubs2000/2000601.pdf

Levine, Roger, R. Gonzalez, S. Cole, M. Fuhrman, and K. Carson LeFlock. 2006. The Geoscience Pipeline: A Conceptual Framework. *Journal of Geoscience Education*, *55*, 458-468.

National Marine Fisheries Service (1996). Expanding opportunities in ocean sciences. *Proceedings of a conference to strengthen the links between HMSCU undergraduates and oceanic graduate studies,* Hampton University. Silver Spring, MD: National Marine Fisheries Service.

National Research Council (1993). *Oceanography in the next decade: Building new partnerships.* Washington, DC: National Academy Press.

National Science Board. (2003). *The science and engineering workforce: Realizing America's potential*. NSB 03-69. National Science Foundation.

National Science Foundation (1992). *Results of a workshop on diversity in biological research.* Arlington, VA: National Science Foundation.

National Science Foundation (2001). Strategy for developing a program for opportunities for enhancing diversity in the geosciences (NSF 01-53). Arlington, VA: NSF.

Olson, Steve and Adam P. Fagen, Editors, 2007. Understanding Interventions that Encourage Minorities to Pursue Research Careers: Summary of a Workshop. National Research Council. National Academies Press.

Pride, C. J. (2003). Crisis in the geoscience workforce. Scenes. Skidaway Marine Science Foundation.

Stahl, J. M. (2005). Research is for everyone: Perspectives from teaching at historically black colleges and universities. *Journal of Social and Clinical Psychology*, *24*(1), 85-96.

Weiner, Lisa, M Leighton, J. Funkhouser (2000) *Helping Hispanic Students Reach High Academic Standards: An Idea Book*, US Department of Education.

Culturally Reliable and Valid Program Evaluation

Notable resources:

Hood, S., R. Hopson & H. Frierson (Eds.) (2005), The Role of Culture and Cultural Context In Evaluation: A Mandate for Inclusion, the Discovery of Truth and Understanding in Evaluative Theory and Practice. Greenwich, CT: Information Age Publishing.

This volume seeks to address select questions drawn from the matrix of the complex issues related to culturally responsive evaluation. Should evaluation be culturally responsive? Is the field heading in the right direction in its attempt to become more culturally responsive? What is culturally responsive evaluation today and what might it become tomorrow? In preparing evaluation tools and analysis, caution must be exercised around existing belief systems that may influence indicators of success, validity or bias. Two chapters are of particular note: (1) Johnson, Elmima. The use of contextually relevant evaluation practices with programs designed to increase participation of minorities in science, technology, engineering, and mathematics (STEM) education; (2) Nelson-Barber, S., LaFrance, J., Trumbull, E., & Aburto, S. Promoting culturally reliable and valid evaluation practice; pages 217-235.

LaFrance, J. (Summer 2004). Culturally competent evaluation in Indian Country. Special issue: In search of cultural competence in evaluation: Toward principles and practices. New Directions for Evaluation, No. 102, 39-50. Jossey-Bass and the American Evaluation Association.

Culturally competent evaluation in Indian Country requires an understanding of the rich diversity of tribal peoples and the importance of self-determination and sovereignty. If an evaluation can be embedded within an indigenous framework, it is more responsive to tribal ethics and values. An indigenous orientation to evaluation suggests methodological approaches, a partnership between the evaluator and the program, and reciprocity.

Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. London: Zed Books, Ltd.

From the vantage point of indigenous peoples, the term "research" is inextricably linked to European imperialism and colonialism. A framework for an indigenous research agenda is set out that encompasses the processes of decolonization, healing, mobilization, and transformation within four community statuses: survival, recovery, development, and self-determination. Numerous examples of indigenous research projects in New Zealand and North America, including projects concerned with education and language maintenance, demonstrate the ways in which an indigenous research agenda is being articulated and indigenous knowledge is being validated.

The National Science Foundation, Directorate for Education and Human Resources, Division of Research, Evaluation, and Communications. The Cultural Context of Educational Evaluation: The Role of Minority Evaluation Professionals. Workshop Proceedings, June 1-2, 2000.

These proceedings serve as a reference point for the Directorate as it builds capacity within the field of educational evaluation. The workshop focused on two themes, around which the report is organized: Academic achievement by underrepresented minorities; and Training and participation of minority professionals in the evaluation of mathematics and science programs.

The National Science Foundation, Directorate for Education and Human Resources, Division of Research, Evaluation, and Communications. The Cultural Context of Educational Evaluation: A Native American Perspective. Workshop Proceedings, April 25-26, 2002.

This workshop was aimed at increasing the supply of minority evaluators for science and mathematics, developing a network to identify and share information about available resource materials, compiling lists of Native American evaluation professionals and identifying training and educational opportunities. Themes centered around: Evaluation issues relating to the academic achievement of Native American students; education/training opportunities for Native American evaluators; and developing, maintaining and expanding a network of Native American evaluators.

Additional Resources:

Nichols, Richard (Santa Clara Pueblo) and Joan LaFrance (Turtle Mt. Chippewa), Indigenous Evaluation: Respecting and Empowering Indigenous Knowledge, The Tribal College Journal, Volume 18 Winter 2006 Issue No. 2.

Aroturuki me te Arotakenga. (Ministry of Maori Development),Te Puni Kökiri (Monitoring and Evaluation Branch), 1999. Evaluation for Maori: Guidelines for Government Agencies.

Kamehameha Schools. Evaluation Hui. Evaluation of Native Hawaiian populations. http://www.ksbe.edu/pase/pdf/EvaluationHui/03_04_17.pdf

LaFrance, J. & Nichols, R. (In Press). Summary report: Stories from the focus groups on an indigenous framing for evaluation. Alexandria, VA: American Indian Higher Education Consortium (AIHEC).

Senese, G. The PENAL Project: Program evaluation and Native American liability. In S. Hood, R. Hopson, & H. Frierson (Eds.) (2005). The Role of Culture and Cultural Context In Evaluation. Greenwich, CT: Information Age Publishing.

White, C. & Hermes, M. (2005). Learning to Play Scholarly Jazz: A Culturally Responsive Evaluation of the Hopi Teachers for Hopi Schools Project, in S. Hood, R. Hopson & H. Frierson (Eds.), The Role of Culture and Cultural Context In Evaluation. Greenwich, CT: Information Age Publishing.

Establishing Mutually-Beneficial Partnerships

Radinsky, J., Bouillion, L., Lento, E. M., & Gomez, L. M. (2001). Mutual beneficial partnerships: A curricular design for authenticity. *Journal of Curriculum Studies, 33*(4), 405-430.

In striving to create authenticity in a novel curricular structure, a `mutual benefit partnership' developed in collaboration with a telecommunications company and four middle schools. The partnership created products of value to the corporate partner as well as to the teachers and students. But attempts to provide significant benefits to all parties of the partnership brought out conflicts in cultural values between school and corporate communities, resulting in both learning opportunities and risks to participants. Mutual benefit from students' work resulted more from ancillary (or secondary) products of their work than from primary products, suggesting the need to design curricular structures to achieve joint focus of school and corporate participants on the primary products of student work.