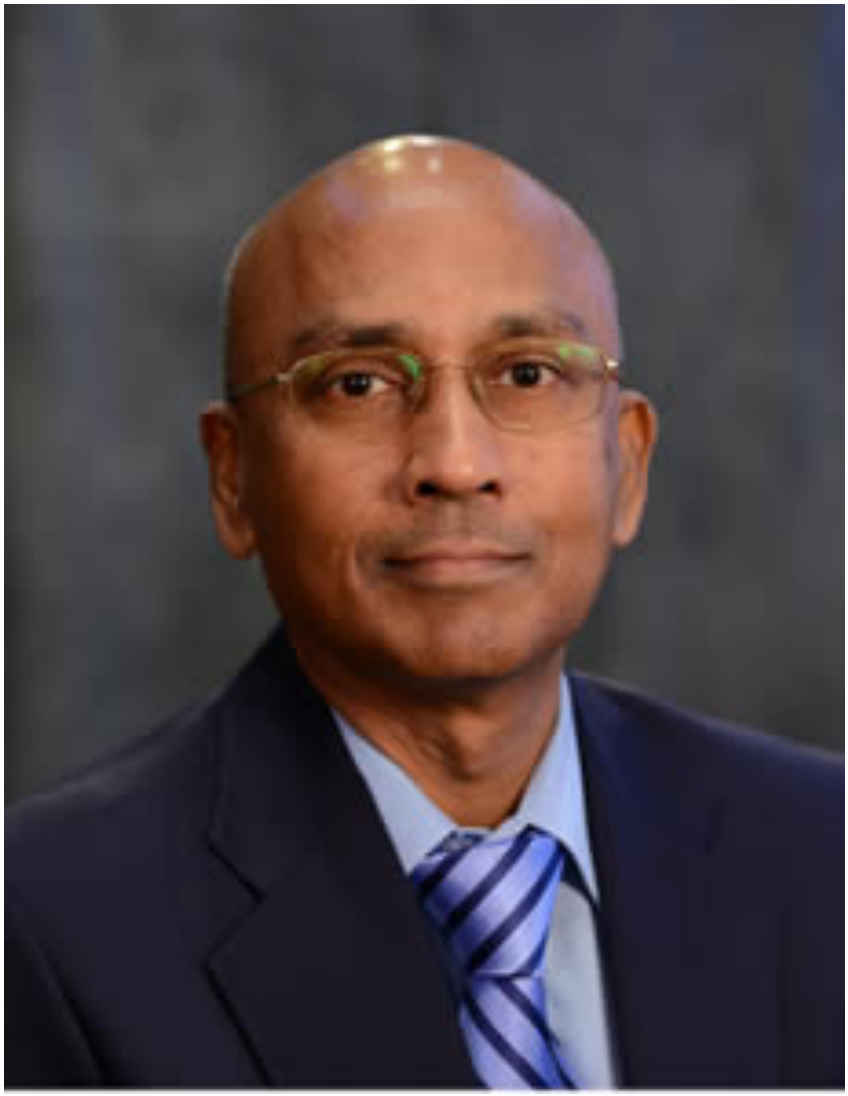

Professor David Devraj Kumar
Professor of Science Education, College of Education, Florida Atlantic University
USA

FAU
FLORIDA ATLANTIC UNIVERSITY

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July 19, 2019

Distinguished Members of the Awards Committee
"Jose Vasconcelos" World Award of Education
World Cultural Council
Case Postale 8
1630 Bulle 1
Switzerland

Ref: Dr. David Devraj Kumar

Distinguished Members of the "Jose Vasconcelos" Awards Committee,

It is my pleasure and honor to nominate Dr. David Devraj Kumar, Professor of Science Educationa at Florida Atlantic University, for the "Jose Vasconcelos" World Award of Education in recognition of his more than a quarter century of valuable and pioneering contributions in the field of Science Education, particularly his work in advancing high quality science teaching and learning among children who come from diverse socio-economic backgrounds. He is a leader in researching and developing multimedia technology integrated real-world science curriculum and instructional materials for augmenting the context of teaching and learning to transform science-learning experiences in a more meaningful mannor to schoolchildren, and for promoting science literacy. He is a champion in developing interactive technology tools for problem-based learning (PBL) with real world contexts in abstract science topics aimed at developing problem-solving skills among children. Along these venues, he has also made considerable community-oriented contributions to science education and actively engaged with policy makers. I have known him as my colleague, his Chair and Dean in the College of Education at Florida Atlantic University for twenty-six years.

The Royal Society of Chemistry awarded him the prestigious Sir Ron Nyholm Education Prize for his "original and innovative contributions to science and specifically chemistry education" and "for leadership in policy and direction." As a mark of his expertise and international contributions to science education he was invited to be a Visiting Fellow (2018-19) by the world renoun think tank The Brookings Institution. He has been recognized by the American Institute of Chemists with the Chemical Pioneer Award for "pioneering research in user-computer interface in chemistry problem solving… and… outstanding contributions to hypermedia science learning." The American Association for the Advancement of Science elected him a Fellow for "distinguished contributions to science education, particularly for cognitive theory based hypermedia science teaching and learning, and for outstanding leadership in policy." He was awarded the John Shrum Award for Excellence in Science Education by the Southeastern Association for the Education of Teachers in Science for 'outstanding contributions to science education," and the STEM Champion Award (for college level faculty) by the International STEM Education Association.

He faithfully continues in his science promotion efforts. He is well respected in his field for connecting classroom science to community resources and real-world applications. The STEM Education Laboratory he directs promotes leadership development through community engagement. For example, he has established a sustainable collaboration with the Fort Lauderdale Museum of Discovery and Science (MODS) for community based real world science education for cultivating teacher leadership among science education students. This win-win collaboration provides invaluable first-hand experiences in developing and teaching with community resources to the general public while the public in

return gain scientific understanding of the MODS exhibits. Additionally, his contributions to science promotion in science go well beyond community engagement. He is the founding editor of the "Public Understanding of Chemistry" section in the refereed journal *The Chemist*. In recognition of his contributions to advocating for community engagement in science education, he was elected as a SENSER Leadership Fellow by the National Center for Science and Civic Engagement. He regularly visits local classrooms promoting STEM through hands on counterintutive demonstrations.

His contributions to the promotion of science reach a wide spectrum of audiences in different countries. Here are a few highlights. *The Hindu* (January 11, 2011), India's leading national newspaper reported his 2011 *Sir A. Ramaswamy Mudaliar Memorial Lecture*, a distinguished public lecture delivered at the University of Kerala as a "Rooting for Science." He was invited to present the *Emmett Carmichael Lecture*, a public lecture on "Chemistry Literacy" by The American Institute of Chemists. The Institute of Electronics and Electrical Engineers Education Society invited him to present the *IEEE Education Society Distinguished Lecture* and made his lecture available at their website to promote problem-based science learning among children across the globe. He has also presented the highly regarded *2nd Samarendranath Sen Memorial Lecture* on the topic "Sustainable science education strategies for the general public: Cultivation of science" at the invitation of the Indian Association for the Cultivation of Science. As part of the Nyholm Education Prize from the Royal Society of Chemistry (UK) noted earlier, he was invited to deliver public lectures ("Pathways to Chemistry Literacy") throughout the United Kingdom at such venues as the University of Edinburgh. Another impact of his science outreach efforts is evident in the fact he has been invited to be the Florida Atlantic University Coordinator of "excellence-focussed" international online mentoring platform in STEMM (science, technology, engineering, mathematics and medicine) by the Global Talent Mentoring Hub.

The impact of Dr. Kumar's contributions to science education spans local, national and international boundaries. His publications are cited by education practitioners and researchers, and even in a few publications of the US National Academy of Sciences. He has presented at various international professional conferences and been invited to deliver lectures by various highly regarded institutions.

Without any reservation I nominate Dr. David Devraj Kumar for the "Jose Vasconcelos" World Award of Education. Thank you.

Sincerely,

Valerie J. Bristor

Valerie J. Bristor, Ph.D.
Dean and Professor
College of Education

VJB/je

The American Institute of Chemists

315 Chestnut Street; Philadelphia, PA 19106/ 215-873-8224/ www.TheAIC.org

July 23, 2019

Distinguished Awards Committee
"Jose Vasconcelos" World Award of Education
World Cultural Council
Case Postale 8
1630 Bulle 1
Switzerland

Ref: Reference Letter for Dr. David Devraj Kumar for the Jose Vasconcelos Award

Dear Awards Committee,

I am writing this letter in support of Dr. David Devraj Kumar's nomination for the "Jose Vasconcelos" World Award of Education. I have known Dr. Kumar for about twenty years, and have worked closely with him on several projects of the American Institute of Chemists and he served as the President on the Institute in 2006. Through this association I have also followed his works. Currently he is Professor of Science Education and Director of the STEM Education Laboratory at Florida Atlantic University, and recently spent his sabbatical as a Visiting Fellow in Governance Studies at The Brookings Institution.

Dr. Kumar is a pioneer in developing computerized methods for analyzing cognition in chemistry problem solving, and a recognized leader in science policy and the promotion of public understanding of science. His research studies and writings have contributed to furthering our understanding of multimedia platforms for engaging students in solving real-life related problems for developing critical thinking skills. Additionally his contributions help us gain insights into effective strategies and policies for the promotion and advancement of science education. The American Institute of Chemists bestowed upon him the Chemical Pioneer award for his contributions to multimedia technology enhanced problem solving. He has been awarded other prestigious awards for his outstanding contributions by the Royal Society of Chemistry and the American Association for the Advancement of Science.

Dr. Kumar is an exceedingly talented individual whose work in the promotion of science education in society and related science education policy has made major contributions to this very important field. His contributions to science education have involved both policy and science. He has published a number of significant papers addressing such topics as the science-technology-society, policies for the promotion science education, and US STEM education reform. He is the founding section editor of the Public Understanding of Chemistry section in *The Chemist* creating an international scholarly platform for contributions to the promotion of science in society and policy. In short Dr. Kumar's work in science education is exemplary. In addition, Dr. Kumar has published a number of well-received articles. He has rendered his service to furthering science education of underserved populations not only in the United States but also in nations such as the Caribbean Islands and India. In recognition of his services to promoting science education in developing nations he was invited to chair the Science Education Committee by the Caribbean Academy of Sciences and elected as a fellow by the Kerala

Academy of Sciences, and the Gujarat Science Academy. In recognition of his outstanding contributions to the field of science education and to the American Institute of Chemists he was made an Honorary Fellow of the Institute, an honor bestowed upon less than one percent of the total membership.

Thus in terms of Dr. Kumar's outstanding contributions to science education, I am pleased to give him my unqualified support for your consideration for the "Jose Vasconcelos" World Award of Education.

Sincerely,

E Gerald Meyer

Secretary and Director, American Institute of Chemists
Dr. E. Gerald Meyer, Emeritus Professor (Chemistry) and Dean (Arts & Sciences), University of Wyoming
The AIC Gold Medalist, 2018

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July 22, 2019

Awards Committee
"Jose Vasconcelos" World Award of Education
World Cultural Council
Case Postale 8
1630 Bulle 1
Switzerland

Ref: Support Letter for Dr. David Devraj Kumar for the Jose Vasconcelos Award

Dear Awards Committee:

I am honored to nominate Dr. David Devraj Kumar for the Jose Vasconcelos Award. I have known Dr. Kumar as his colleague in the College of Educationan at Florida Atlantic University wher he is serving as a Professor of Science Education for over two decades. He is also the Founding Director of the STEM Education Laboratory in the College Education and was a Visiting Fellow in education policy at The Brookings Institution.

Dr. Kumar has made outstanding contributions to improving our understanding of science problem solving with computers, and policy efforts promoting integrated science education. He has directed several funded projects. In one of his projects, he developed web-based video anchors for augmenting the context of problem-based learning in nanotechnology. This project integrates science and engineering concepts. His research shows that children learn science and solve science problems better when science concepts are anchored in real-world (science-technology-society) applications through enriched multimedia computer environments. In recognition of his research contributions, he was awarded such prestigious awards as the 2008-2009 Sir Ron Nyholm Education Prize by the Royal Society of Chemistry for "original and innovative contributions to science and specifically chemistry education" and for "leadership in policy and direction," and the 2006 Chemical Pioneer Award by the American Institute of Chemists for "pioneering research in user-computer interface in chemistry problem solving." He is cited in the *Bulletin of STS* (vol. 11, 1991) as one of the "authors routinely promote STS [Science-Technology-Society connections] to reverse present levels of scientific illiteracy." Recognizing his science popularization efforts *The Hindu* (March 2, 2007) remarked "On a mission." *The Hindu* (January 11, 2011) reported his Sir Ramaswamy Mudaliar Memorial Lecture at the University of Kerala as "Rooting for Science."

Dr. Kumar has an extensive history of teaching science to students of all ages, from elementary grades to graduate level courses. His extensive research contributions in science teaching with computers have been cited by scholars and in NSF proposals and software development. His IEEE Education Society Distinguished Lecture on the Approaches to Interactive Video Anchors in Problem Based Science Learning has been downloaded and used by science teachers around the world. He has been invited to judge myriad children's science fair projects. He has given invited lectures promoting science education at K-12 schools as well as major universities.

He has provided professional development for school teachers in science. For example, in partnership with the Broward County Public School District and the San Diego State University Constructing Physics Understanding Project, he provided a three-year long workshop for elementary and secondary teachers.

Findings of this workshop indicate positive gains in participants knowledge of science concepts and skills in teaching science integrated with computer simulations, and are published in the refereed *Journal of Science Education and Technology*.

He has receive several awards and recognitions for his science teaching and promotion that include The John Shum Award for Excellence in Science Education from the Southeastern Association for Science Teacher Education, the Excellence in Undergraduate Teaching Award from Florida Atlantic University, and the Distinguished Teacher of the Year Award from the College of Education at Florida Atlantic University. He has been invited to present distinguished lectures on science education promotion by education and research institutions in various countries, the Royal Society of Chemistry, universities, and science academies.

Dr. Kumar has a long history of collaborations with colleagues from disciplines outside of science in research and development projects. He is someone who realizes the critical role that reading/literacy plays in the advancement and promotion of science education, and has co-authored science integrated reading/literacy articles for practioner use. One such article on nano literacy strategies appeared in a well regarded international journal the *School Science Review*.

In honoring Professor Kumar by awarding him the "Jose Vasconcelos" Award not only will it serve as a mark of recognition to a dedicated science educator disseminating science education and research, but also will be a significant addition to its rank of members of a scholar whose active participation will tremendously benefit the World Cultural Council in its education and outreach pursuits.

Sincerely,

Deborah W. Shepherd

Deborah W. Shepherd, Ed. D.
Associate Dean
Email: dshep@fau.edu

RESUME

Dr. David Devraj Kumar
Professor of Science Education
College of Education
Florida Atlantic University
3200 College Avenue, Davie, FL 33314, USA

Dr. David Devraj Kumar has made invaluable and pioneering contributions to the field of Science Education, to advance high quality science teaching and learning among children who come from diverse socio-economic backgrounds. Dr. Kumar is a leader in researching and developing multimedia technology integrated real-world science curriculum and instructional materials for augmenting the context of teaching and learning to make science learning experiences more meaningful to school children, and to promote public understanding of science. He is a champion in developing interactive technology tools for problem-based learning (PBL) with real world contexts in abstract science topics aimed at developing problem-solving skills among children. He has also made considerable community-oriented contributions to science education and his contributions help us gain insights into effective strategies and policies for the promotion and advancement of science education.

The American Institute of Chemists bestowed upon him the Chemical Pioneer award for "pioneering research in user-computer interface in chemistry problem solving… and… outstanding contributions to hypermedia science learning." He has been awarded other prestigious awards by the Royal Society of Chemistry for "original and innovative contributions to science and specifically chemistry education" and "for leadership in policy and direction," and the American Association for the Advancement of Science for "distinguished contributions to science education, particularly for cognitive theory based hypermedia science teaching and learning, and for outstanding leadership in policy." Due to his activities in promoting science education in developing nations he was invited to chair the Science Education Committee by the Caribbean Academy of Sciences and elected as a fellow by the Kerala Academy of Sciences, and the Gujarat Science Academy. As a mark of his expertise and international contributions to science education he was invited to be a Visiting Fellow by the world renoun think tank The Brookings Institution to research STEM education policy and practice.

He is cited in the *Bulletin of STS* (vol. 11, 1991) as one of the "authors routinely promote STS [Science-Technology-Society connections] to reverse present levels of scientific illiteracy." Recognizing his science popularization efforts *The Hindu* (March 2, 2007) remarked "On a mission." *The Hindu* (January 11, 2011) reported his Sir Ramaswamy Mudaliar Memorial Lecture at the University of Kerala as "Rooting for Science." In recognition of his outstanding contributions to the field of science education and to the

American Institute of Chemists he was made an Honorary Fellow of the Institute, an honor restricted to less than one percent of the total membership.

Dr. Kumar is well respected in his field for connecting classroom science to community resources and real-world applications. The STEM Education Laboratory he directs promotes leadership development through community engagement. For example, he has established a sustainable collaboration with the Fort Lauderdale Museum of Discovery and Science (MODS) for community based real world science education for cultivating teacher leadership among science education students. This win-win collaboration provides invaluable first-hand experiences in developing and teaching with community resources to the general public while the public in return gain scientific understanding of the MODS exhibits. Additionally, his contributions to science promotion in science go well beyond community engagement.

He has a long history of productive collaborations with colleagues from disciplines outside of science in research and development projects. He is someone who realizes the critical role that reading/literacy plays in the advancement and promotion of science education, and has co-authored science integrated reading/literacy articles for practioner use.

Dr. Kumar was born and raised in India to parents who are educators. So, working in the field of education is more than a career for him, instead it is a lifestyle and an opportunity to build up human beings. In recognition of his mother who was a state supervisor of science education, his siblings and himself have established a scholarship endowment to provide recognition scholarships for high achieving schoolgirls in a local school in India, and have instituted medals in recognition of his father's scholarly contributions to the study of oriental languages in the college where he held professorship. Dr. Kumar receveid his bachelors degree in chemistry and a master's degree in chemistry from University of Kerala, India, master's degree in analytical cheimistry from the University of Louisville, USA and doctorate in science education from Vanderbilt University, USA. He spent two years conducting post-doctoral research at The Ohio State University, USA.

His contributions to science education include books, book chapters, monographs, research reports, over 100 refereed journal articles, and numerous conference presentations and invited lectures. He is former Editor-in-Chief of *The Chemist*, the official refereed journal of the American Institute of Chemists, and serves on the editorial boards of *Journal of Science Education and Technology*, *Journal of materials Education* and *International Journal of Education in Mathematics, Science and Technology*. He has directed several research projects competitively funded by state, federal and private fundeing agenciesand has mentored undergraduate and graduate students, and chaired fourteen doctoral dissertations to successful completion.

Curriculum Vitae

DAVID DEVRAJ KUMAR

Florida Atlantic University
3200 College Avenue
Davie, Florida 33314
954 236 1044; david@fau.edu

EDUCATION

Ed.D., Science Education, Vanderbilt University, 1991
M.S., Analytical Chemistry, University of Louisville, 1987
M.Sc., Chemistry, University of Kerala, India, 1980
B.Sc., Chemistry, (Physics & Mathematics minors), University of Kerala, India, 1978

CURRENT AND RECENT ACADEMIC POSITIONS

Professor of Science Education, College of Education, Florida Atlantic University (FAU), 08/1998-present
Visiting Fellow, Governance Studies, Brown Center on Education Policy, The Brookings Institution, 07/2018-09/2019 (Sabbatical)
Director (Founding), STEM Education Laboratory, College of Education, Florida Atlantic University, 11/2015-present
FAU Coordinator, Global Talent Mentoring Hub (GTMH), 7/2019-present
Member, Harbor Branch Oceanographic Institute Pillar, Florida Atlantic University, 2017-present

AWARDS AND HONORS (SELECTED)

Outstanding Faculty Position Paper Award, Southeastern Association for Science Teacher Education, 2018, 2001, 1997, 1996
Honorary Fellow, The American Institute of Chemists, 2018
Department of Energy's Princeton Plasma Physics Workshop for MSI Faculty, Princeton Plasma Physics Laboratory, 2017
SENCER Leadership Fellow, National Center for Science and Civic Engagement, 2016-2018 elected
Faculty Member of the Year, Florida Atlantic University Broward Achievement Awards, 2013-2014
Fellow, International Society for Design and Development in Education, 2014
Deborah Tippins Mentor Award, Southeastern Association for Science Teacher Education, 2014
Fellow, Kerala Academy of Sciences, India, 2013 elected
STEM Champion Award (College Level), International STEM Education Association, 2013
Presidential Citation of Merit, The American Institute of Chemists, 2013
Erudite, Kerala State Higher Education Council Erudite Scheme, Kannur University, India, 2011
Fellow, Gujarat Science Academy, India, 2011 elected
Faculty Member of the Year, Florida Atlantic University Broward Achievement Awards, 2009-2010
Emmett Carmichael Members and Fellows Lecture, *Chemistry literacy: What can be done?* The American Institute of Chemists, 2010
Sir Ron Nyholm Education Prize, Royal Society of Chemistry (UK), 2008-2009
Fellow, American Association for the Advancement of Science, 2008 elected
Chemical Pioneer Award, The American Institute of Chemists, 2006
Member, Council of Scientific Society Presidents, 2006 inducted
Researcher of the Year, College of Education, Florida Atlantic University, 2003-2004
Distinguished Teacher of the Year Award, College of Education, Florida Atlantic University, 2003-2004
Member, European Academy of Sciences and Arts, 2002 elected
Member, Caribbean Academy of Sciences, 2001 elected
Miriam K. Mills Award, Policy Studies Organization, 1999

Outstanding Journal Article Award, Research and Theory Division, Association for Educational Communications and Technology (co-recipient), 1999
Award for Excellence in Undergraduate Teaching, Florida Atlantic University, 1999
The John Shrum Award for Excellence in the Education of Science Teachers, Southeastern Association for the Education of Teachers in Science, 1998
Best Program Evaluation Research Award, Society for Information Technology and Teacher Education, Association for the Advancement of Computing in Education (co-recipient), 1997
Centennial Scholar Researcher Award, Phi Kappa Phi Chapter, Florida Atlantic University, 1997
University Research Award, Florida Atlantic University, 1995
Fellow, The American Institute of Chemists, 1995 elected
Educational Technology Research and Development Young Scholar Award, Association for Educational Communications and Technology, and ECT Foundation, 1994
Governor's Official Recognition for Services in Education, State of Ohio, 1993

CONTRIBUTIONS TO DIVERSITY, EQUITY AND INCLUSION (SELECTED)

Mentored underrepresented students to conduct research, publish journal articles, and present conference papers, and write undergraduate research grants at Florida Atlantic University.
Serving on the Director Board of Florida Fund for Minority Teachers, Inc., since 2007 to increase scholarship opportunities for underrepresented students to pursue a degree in teacher education. Worked on the FFMT Legislative Committee and revised eligibility statements/criteria to increase the pool of FFMT scholarship recipients.
Served on the U.S. Census Bureau National Advisory Committee on Racial, Ethnic, and Other Populations (NAC), U.S. Department of Commerce, 2014-2017 and advised the Bureau on matters related to equity, diversity and inclusion policy in Census operations.
As the Chair of the American Institute of Chemists Awards Committee, took steps to increase the number of nominations of women scientists for the AIC awards paving the way for outstanding women scientists receiving the AIC Gold Medal and Chemical Pioneer Awards.
As the Editor-in-Chief of *The Chemist* organized an internationally diverse Editorial Review Board, opened mamuscript submission globally.

SERVICE (SELECTED)

Editorial & Review Boards

Editorial Board, *Intl. J. of Education in Mathematics, Science and Technology*, 2016-present
Editorial Review Board, *Journal of Nano Education*, 2011-2017
Editorial Board, *Journal of Materials Education*, 2007-Present
Communications Sub Committee, *ISDDE Newsletter*, 2015-Present
Editorial Review Board, *The Chemist,* 2003- Present
Founding Section Editor, Public Understanding of Chemistry, *The Chemist*, 2012-2018
Editorial Board, *Journal of Science Education and Technology,* 1995-Present
Editorial Team, e-*Journal of the Caribbean Academy of Sciences*, 2007-2015
Guest-Editor (main), *Journal of Science Education and Technology*, 2005, 1995
Editorial Board, *Policy Futures in Education,* 2004-2015
Guest Editor (main), *The Review of Policy Research*, 2003
Consulting Editor, Research Division, *Ed Tech Research & Development,* 1999-2007

Selected International/National/Local Service

Invited Participant, National conference call, A briefing to discuss the *Federal STEM Education 5-Year Strategic Plan* by the White House Office of Science and Technology Policy, 2018
Member, Steering Committee, NanoFlorida 2019 International Conference, in progress
Member, Organizing Committee, International Conference on Education in Mathematics, Science & Technology, Marmaris, Turkey, 2017-2018

Member, World Summit Award (National/USA) Expert Panel, 2016
Member, Commission on International Initiatives, Association of Public and Land-grant Universities, 2014-2017
External Examiner for Doctoral Dissertations, Bharathiar University, India, 2014-2016
Resource Person, International Seminar Redefining Educational Practices Integrating Indian Epistemology and Modern Cognitive Neuroscience NVKSD College of Education, K. K. District, India, 2014-2015
Member, Planning Committee, Science & Mathematics Teacher Imperative (SMTI) National Conference, Association of Public and Land-Grant Universities, 2014
Reviewer, Science & Mathematics Teacher Imperative (SMTI) National Conference, Association of Public and Land-Grant Universities, 2014
Member, Advisory Committee, International Conference on Advanced Trends in Engineering and Technology, Vimal Jyothi Engineering College, Kannur, India, 2013-2014
Invited Participant, *RESPECT, National Conversation About the Teaching Profession*, U.S. Department of Education (Atlanta), FAU Davie, 2012
Presider, Opening Ceremony, International Congress for School Effectiveness and Improvement, Fort Lauderdale, FL., 2006
Invited Participant, Post-State of the Union Conference Call, U.S. Department of Education, 2006

RESEARCH AND SCHOLARLY ACTIVITIES

Journal Articles (N=116), Books (N=3), Edited Theme Issues and Proceedings (N=4), Chapters (N=15), Book Reviews and Other Refereed Publications (N=18), Editorials (N=17), Reports and Other Publications (N=27), Software and Multimedia (N=7), Invited Lectures & Presentations (N=29), Refereed National/International Presentations (N=62), Regional/State Presentations (N=12), Other Presentations (N=13), Organized Conferences, Seminars & Outreach Efforts (N=11)

Selected Publications

Kumar, D. D., & Lapp. S. I. (in press). Science in the context of society through QR code in Problem Based Learning. *The Researcher-International Journal of Management Humanities and Social Sciences*.

Kumar, D. D. & Yurick, K. A. (2018). Web-assisted problem-based learning in nanotechnology and quality of student learning in elementary science. *Journal of Materials Science Education, 40*(1-2), 29-58.

Kumar, D. D., & Dunn, J. (2018). Self-reflections of undergraduate students on using web-supported counterintuitive science demonstrations. *Journal of Science Education and Technology.* Published online: https://doi.org/10.1007/s10956-018-9729-1

Altschuld, J. W., & Kumar, D. D. (2010). *Needs assessment: An overview.* CA: Sage Publications.

Kumar, D. D., &Chubin, D. E. (Eds.) (2000). *Science, technology, & society: A sourcebook on research and practice.* New York: Kluwer Academic/Plenum Publishers.

Kumar, D. D., & Crippen, K. (Eds.) (2005). Science education in review. *Journal of Science Education and Technology*, *14*(2), 143-269.

Kumar, D. D., &Altschuld, J. W. (2003). Science education policy: A symposium. *The Review of Policy Research, 20*(4), 561-567.

Grants Supported Research and Development Activities (2.4 million dollars)

U.S. Department of Education, Florida Department of Education, AERA Grants Program with NSF funds, Center for Research in Math and Science Education/SDSU with NSF funds, Ewing Marion Kauffman Foundation, etc.

Note: A complete CV available upon request. Thanks.

List of 10 Most Important Publications

Nomination for "Jose Vasconcelos" World Award of Education

Nominee: Dr. David Devraj Kumar, Florida Atlantic University

Kumar, D. D. & Yurick, K. A. (2018). Web-assisted problem-based learning in nanotechnology and quality of student learning in elementary science. *Journal of Materials Science Education, 40*(1-2), 29-58.

Kumar, D. D., & Dunn, J. (2018). Self-reflections of undergraduate students on using web-supported counterintuitive science demonstrations. *Journal of Science Education and Technology.* Published online: https://doi.org/10.1007/s10956-018-9729-1

Kumar, D. D. (2017). Teaching Counterintuitive science. *Primary Science, 148*, 33-35.

Kumar, D. D. (2016). Nanometry in science teaching. *School Science Review, 97*(361), 59-62.

Kumar, D. D. (2016). Neuroscience basis of context in multimedia enhanced problem-based STEM learning. *The Researcher-International Journal of Management Humanities and Social Sciences*, *1*(2), 1-8.

Kumar, D. D. (2015). A study of web based anchors in nanotechnology for problem-based science learning. *Journal of Nano Education*, 7(1), 58-64.

Kumar, D. D. (2010). Approaches to video anchors in problem-based science learning. *Journal of Science Education and Technology, 19*(1), 13-19.

Kumar. D. D., & Sherwood, R. D. (2007). Effect of a problem based simulation on the conceptual understanding of undergraduate science education students. *Journal of Science Education and Technology, 16*(3), 239-246.

Kumar, D. D., & Altschuld, J. W. (2004). Science, technology and society: A compelling context for United States - Canada collaboration. *American Behavioral Scientist, 47*(10), 1358-1367.

Kumar, D. D., & Altschuld, J. W. (1999). Evaluation of interactive media in science education. *Journal of Science Education and Technology, 8*(1), 55-65.

List of All Publications

Nomination for "Jose Vasconcelos" World Award of Education

Nominee: Dr. David Devraj Kumar, Florida Atlantic University

Refereed Journal Articles (N=116)

Kumar, D. D., & Lapp. S. I. (in press). Science in the context of society through QR code in Problem Based Learning. *The Researcher-International Journal of Management Humanities and Social Sciences*.

Kumar, D. D., & Persin, R. C. (in press). Solving numerical problems in chemistry and physics: Ideas for high school teachers. *Voices of Teachers and Teacher Educators*.

116. Kumar, D. D. & Yurick, K. A. (2018). Web-assisted problem-based learning in nanotechnology and quality of student learning in elementary science. *Journal of Materials Science Education, 40*(1-2), 29-58.
115. Hill, J. O., & Kumar. D. D. (2018). Principles, policies and practices in establishing a post-secondary chemistry department: A retrospective evaluation. *The Chemist, 91*(1), 20-24.
114. Kumar, D. D., & Dunn, J. (2018). Self-reflections of undergraduate students on using web-supported counterintuitive science demonstrations. *Journal of Science Education and Technology*. Published online: https://doi.org/10.1007/s10956-018-9729-1
113. Kumar, D. D. (2017). Analysis of interactive media supported PBL in STEM with selected learning sciences interest areas. *International Journal of Education in Mathematics, Science and Technology, 5*(1), 53-61.
112. Kumar, D. D. (2017). Teaching Counterintuitive science. *Primary Science, 148*, 33-35.
111. Kumar, D. D. (2017). The need for nanometry education. *The Chemist, 91*(1), 32-33.
110. Kumar, D. D. (2016). Neuroscience basis of context in multimedia enhanced problem-based STEM learning. *The Researcher-International Journal of Management Humanities and Social Sciences*, *1*(2), 1-8.
109. Kumar, D. D. (2016). Nanometry in science teaching. *School Science Review, 97*(361), 59-62.
108. Kumar, D. D., Nair, P. B., Justinvictor, V. B., & Thomas, P. V. (2016). Structural and optical properties of zinc oxide nanorods prepared by aqueous solution route. *The Chemist*, *89*(1), 1-5.
107. Kumar, D. D. (2015). A study of web based anchors in nanotechnology for problem-based science learning. *Journal of Nano Education*, 7(1), 58-64.
106. Hill, J. O., & Kumar, D. D. (2015). The development, implementation and quality assurance of a tertiary course on carbon neutral fuels, energy and environmental sustainability. *The Chemical Educator, 20*, 157-166.
105. Kumar, D. D. (2015). Soap bubbles: Not just kids' stuff! *The Chemist, 88*(2), 36-37.
104. Steidle, L., Kumar, D. D., & Torres, L. (2015). Inducing structure to promote science literacy. *Florida Science Teacher*, Winter, 6-10.
103. Hill, J., Kumar, D. D., & Verma, R. K. (2014). Designing core concepts for a tertiary chemistry course. *The Chemist, 87*(1), 14-22.
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5. Kumar, D. D. (2012). Editorial: Relaunching The Chemist. *The Chemist, 85*(1&2).
4. Kumar, D. D., & Crippen, K. J. (2005). Science education in review: Response to secretary's summit 2004. *Journal of Science Education and Technology, 14*(2), 143-145.
3. Kumar, D. D., &Altschuld, J. W. (2003). Science education policy: A symposium. *The Review of Policy Research, 20*(4), 561-567.
2. Kumar, D. D., & Tobias, S. (1995). Guest editorial: Toward a technology for science assessment. *Journal of Science Education and Technology, 4*(1), 5.

1. Helgeson, S. L., Kumar, D. D., & Smith, P. J. (1995). Foreword. In Helgeson, S. L., Kumar, D. D., & Smith, P. J. (Eds.) (1995). *Proceedings from the Working Conference on Applications of Technology in the Science Classroom.* Columbus, OH: The National Center for Science Teaching and Learning.

Reports and Other Publications (N=27)

28. Kumar, D. D. (In Review). *Road to American STEM reform: A view from selected NSSME results on science teachers and teaching*. Brown Center Chalk Board (October 30, 2018). Washington, DC: The Brookings Institution.
27. Kumar, D. D., & Hansen, M. (2018). *Climate confusion: Content and strategies, not controversy, are the biggest challenges for science teachers.* Brown Center Chalk Board (October 30, 2018). Washington, DC: The Brookings Institution.
26. Contributed to Serino, L. (ed.), *As kids go back to school,* …, Brown Center Chalk Board (September 5, 2018). Washington, DC: The Brookings Institution.
25. Kumar, D. D. (2015). *Selected lecture notes: Science content reviews and research based methods*. Davie, FL: Florida Atlantic University.
24. Kumar, D. D. (2011). *Web-based anchors in nanotechnology for problem based learning in science*. (A report to the Ewing Marion Kauffman Foundation.) Davie, FL: Florida Atlantic University.
23. Kumar, D. D. (2006). *Research and lesson plans in water quality using multimedia*. (A report to the SFCSU/National Park Service.) Davie, FL: Florida Atlantic University.
22. Kumar, D. D. (2002). *Evaluation report: Florida-Israel Institute conference on technology issues in higher education.* Davie, FL: Florida Atlantic University.
21. Kumar, D. D., Baker, M., & Tobias, K. (2000). *Constructing physics understanding in a computer supported learning environment - FAU team report*. Davie, FL: Florida Atlantic University.
20. Kumar, D. D. (1999). *Why Johnney can't teach science? Scientific understanding of preservice elementary teachers*. Davie, FL: Florida Atlantic University.
19. Kumar, D. D. (1997). *A study of education policy efforts at the Brookings Institution.* Davie, FL: Florida Atlantic University.
18. Kumar, D. D. (1996). *Computer-based science assessment: Reanalysis and synthesis.* (A report to the National Center for Science Teaching and Learning.) Davie, FL: Florida Atlantic University.
17. Kumar, D. D., & Altschuld, J. W. (1996). *Evaluation of educational technology in preservice teacher education.* (A report to the AERA Grants Program.) Davie, FL: Florida Atlantic University.
16. Kumar, D. D. (1995). *Effect of computer interfaces on chemistry problem solving.* (A report to the National Center for Science Teaching and Learning.) Davie, FL: Florida Atlantic University.
15. Kumar, D. D., & Romance, N. R. (1994). *Secondary science NCATE report.* Davie, FL: Florida Atlantic University.
14. Kumar, D. D. (1993). *A summary of the developments in national standards in key curricular fields*. (A report prepared for the Office of the Governor, State of Ohio). Columbus, OH: National Center for Science Teaching and Learning.
13. Helgeson, S. L., & Kumar, D. D. (1993). Applications of technology in science assessment. *Cognosos, 2*(3), 1-3.
12. Kumar, D. D. (1993). Toward a technology for assessment: Can cognitive psychology shape computer technology for performance assessment? *Cognosos, 2*(2), 5.
11. Kumar, D. D. (1993). HyperEquation. *The Agora, 3*, 8-9.
10. Kumar, D. D., & Berlin, D. F. (1993). Status of STS education in the USA. *Cognosos, 2*(3), 6.
9. Kumar, D. D. (1993). Multimeter for inexpensive electricity experiments. *The Agora, 3*, 11.
8. Macce, B., & Kumar, D. D. (1993). A note on the National Center for Science Teaching and Learning. *The Agora, 3*, 10.
7. Hofwolt, C. A., Kumar, D. D., Johnston, J., Carrison, S., & Altman, J. E. (1992-93). *Hyperscience for middle school*. (An interactive video.) Nashville, TN: Vanderbilt University.

6. Contributed Chapter: Galvanic (electrochemical) cells. (1991). In Joesten, M. D., (Ed.), *Experiments for chemistry 102B*. Nashville, TN: Vanderbilt University.
5. Kumar, D. D. (1991). *A note on "HyperEquation."* Columbus, OH: National Center for Science Teaching and Learning.
4. Kumar, D. D. (1990). Curriculum concerns of Science-Technology-Society education in the United States of America. *Science, Technology & Society Curriculum Newsletter*, No: 82, 7-14.
3. Kumar, D. D. (1990). *Condition of precollege chemistry education in the United States of America: Policy recommendations*. (A position paper submitted to the American Institute of Chemists). Nashville, TN: Vanderbilt University.
2. Kumar, D. D. (1990). *Analytical instrumentation for non-chemistry majors: A report of early findings*. (A project report to the Royal Society of Chemistry, Grant No. SSL/DH/VU426-100-5632). Nashville, TN: Vanderbilt University.
1. Kumar, D. D. (1990). Phases of matter. *Teaching & Teacher Education*, *6*(4), I.

Software and Multimedia (N=7)

7. Kumar, D. D. (2013). *Problem-based learning with nanotechnology*. Web-based instructional software in nano sunscreen selection, nano-fuel cells and societal issues. Davie, FL; Florida Atlantic University.
6. Kumar, D. D., Rodney, D., & Binder, A. (2006). *Synchronized Instructional Video Observation System.* Research software for interaction analysis. Davie, FL: Florida Atlantic University.
5. Kumar, D. D. (2001). *HyperEquation, Version 3*. Macintosh software for chemistry assessment. Davie, FL: Florida Atlantic University.
4. Kumar, D. D., &Helgeson, S. L. (1995). *HyperChemistry* (Macintosh and Pen-Point versions). Research software for performance assessment in chemistry, (Part of an OERI funded project). Columbus, OH: National Center for Science Teaching and Leaning.
3. Kumar, D. D. (1993). *HyperEquation, Version 2*. Macintosh software for chemistry assessment, (Part of an OERI funded project). Columbus, OH: National Center for Science Teaching and Leaning.
2. Kumar, D. D. (1991). *HyperEquation*. Macintosh software for chemistry assessment, (Part of an OERI funded project). Columbus, OH: National Center for Science Teaching and Leaning.
1. Hofwolt, C. A., Kumar, D. D., Altman, J. E. (1991). *HyperScience 456*. Laser videodisc for anchored instruction as part of a NSF funded project. Nashville, TN: Vanderbilt University.

Endowed/Distinguished Lectures (N=11)

11. Key Note Address, *Sustainable strategies for science promotion*. Foundational Seminar, Kerala Academy of Sciences, Trivandrum, India, December 18, 2018.
10. Emmett Carmichael Members and Fellows Lecture, *The Chemist: Looking forward.* The American Institute of Chemists, 2013
9. Keynote Address, Inaugural Session, The 'Erudite' – Scholar in Residence Program, and the Erudite Lecture Series, Kannur University, India, 2011 (sponsored by the Kerala State Higher Education Council under the Erudite Scheme)
8. Sir A. Ramaswamy Mudaliar Memorial Lecture, *Trends in university science,* University of Kerala, 2011
7. Emmett Carmichael Members and Fellows Lecture, *Chemistry literacy: What can be done?* The American Institute of Chemists, 2010
6. Special Invited Lecture, *Problem-based science learning with nanotechnology using web-based video anchors*, Indian Science Congress Association, 2010
5. Sir Ron Nyholm Lecture, *Pathways to (civic) chemistry literacy*, (sponsored by the Royal Society of Chemistry), University of Edinburgh; University of Birmingham; Queen's University at Belfast; Manchester Metropolitan University; University of Hull, 2009
4. Distinguished Lecture, *Approaches to interactive video anchors in problem-based science learning*, Institute of Electrical and Electronics Engineers Education Society, 2008 (Available at: http://www.fau.edu/IEEE_Lecture/PBL_IEEE_Lecture/PBL_Lecture.htm)

3. The 2nd Samarendra Nath Sen Memorial Lecture, *Sustainable science education strategies for the general public,* Indian Association for the Cultivation of Science, 2007
2. Award in Recognition and Appreciation for Outstanding Leadership and Service to the College of Education, (Assoc. Dean 2005-07), College of Education, Florida Atlantic University, 2007
1. Chemical Pioneer Lecture, *Factors impeding classroom chemistry*, American Institute of Chemists, 2006

Invited Lectures & Presentations (N=29)

30. *Trends and issues in American STEM education*. A brownbag seminar presented at the Brown Center on Education Policy, The Brookings Institution, Washington, DC., May 2019.
29. *Understanding STEM education reform in the context of practice*. A work in progress brainstorming seminar presented at the Brown Center on Education Policy, The Brookings Institution, Washington, DC., October 2018.
28. *Help teachers overcome "climate confusion,"* Annual meeting of the Southeastern Association for Science Teacher Education, October 2018 (As part of winning the Outstanding Faculty Position Paper Award)
27. STEM Symposium Presentation, *An engaging approach to undergraduate science learning*. AAAS Nordic Division Sponsored Symposium, American Chemical Society Northwest Regional Meeting, Anchorage, AK, June 2016
26. *STEM education in context*. Science, Mathematics and Technology Center, Ontario Institute for Studies in Education, University of Toronto, Canada, April 2016
25. *Engaging students in problem based learning in STEM*. College of Engineering and Computer Science, Enhancing the Climate for Persistence and Success in Engineering in collaboration with the Department of Biomedical and Chemical Engineering, Syracuse University, Syracuse, NY, February 2016
24. *Highlights of science education tracks at FAU.* Department of Education, University of Kerala, India, 2015
23. *STEM education in NSF's sustainability competitions: Maximizing potential through Problem-Based Learning with multimedia anchors*. FAU Sponsored Programs Workshop on Funding for Environmental Sustainability Research and Education, FAU Davie, 2014
22. *Problem-based learning with interactive video anchors: A case for chemistry*. Chemistry Education Research Seminar, The Catholic University of America, Washington, DC., 2013
21. *Problem-based science learning with technology,* Department of Education, University of Kerala, 2013 (NAAC Quality Evaluation)
20. *A learning sciences perspective of science learning with technology*, International Education Meet 2012, Education for Global Excellence, Trivandrum, India, 2012
19. *Science through experiential learning: Research and practice,* Mar Theophilus Training College Internal Quality Sustenance Cell Regional Colloquium, India, 2011
18. *Sustainable approaches to promote civic science literacy in the United* States, The Catholic Academy of Sciences in the United States of America, 2010
17. *Science education with nanoscale materials: Opportunities and challenges*, A presentation to selected staff at the Royal Society of Edinburgh, UK, 2009
16. *Web-based virtual learning: Problem-based science learning anchored in interactive media*, International Seminar and Eighth Annual Convention, University of Kerala and Council for Teacher Education, India, 2009
15. *Teaching engaging science*, Faculty Improvement Program, St. Thomas Residential School, Trivandrum, India, 2009
14. *Problem based science learning with video anchors: Implications for nanoeducation*, University of Canterbury at Christ Church, New Zealand, 2008
13. *Pathways to science and technology for all*, Institution of Engineers (India) Kerala State Center along with IEEE Kerala Section, Computer Society of India, Aeronautical Society of India, Systems Society of India and IETE, Trivandrum, India, 2007

12. *Critical role of research*, First year M.Sc. Chemistry students, Mar Ivanios College, India, 2007
11. *Problem based science learning anchored in nanotechnology*, Researching Practices Conference, Faculty of Education, Cambridge University, United Kingdom, 2005
10. *Science education in the USA*, Department of Science Education, University of Kerala, India, 2005
9. *Insights form multiple evaluations of technology in science education,* Gordon Research Conference on Visualization in Science and Education, Queen's College, Oxford University, UK, 2003
8. *Understanding interactive media in science education,* Caribbean Academy of Sciences annual meeting, Jamaica, 2002
7. *Challenges facing teacher education in science,* Annual meeting of the Southeastern Association for the Education of Teachers in Science, 2001 (As part of winning the Outstanding Faculty Position Paper Award)
6. *Teaching science*, First Annual Education Symposium, Broward Community College South Campus, 2000
5. *Science teacher education in an era of standards based reform,* Annual meeting of the Southeastern Association for the Education of Teachers in Science, 1997 (As part of winning the Outstanding Faculty Position Paper Award,)
4. *Considerations for networking for better practices in science education,* Annual meeting of the Southeastern Association for the Education of Teachers in Science, 1996 (As part of winning the Outstanding Faculty Position Paper Award, co-recipient)
3. *Strategies for reforming chemistry education*, Professional Issues in Chemical Education II: Toward the 21st Century, The American Institute of Chemists, 1996
2. *Evaluation of a multimedia project in science education: Policy implications.* Center for Educational Computing Initiatives at the Massachusetts Institute of Technology, 1995
1. *Technology applications in science education,* Fall '95 Research Colloquium, Broward Faculty Senate, Florida Atlantic University, 1995

Refereed National/International Presentations (N=62)

Kumar, D. D. (accepted). *Road to American STEM education reform: Review of selected NSSME results*. A paper accepted for presentation at the education conference Critical Questions in Education Symposium, The Academy for Education Studies, Chicago, IL.

Kumar, D. D. (accepted). *Missing factors in economics based arguments leveraging STEM education for a competitive workforce*. A paper accepted for presentation at the education conference Critical Questions in Education Symposium, The Academy for Education Studies, Chicago, IL.

62. Kumar, D. D. (2018, January). *Plasma in energy education in Florida science standards.* A paper presented at the 3rd National Energy Education Summit, National Council for Science and the Environment, Washington, DC.
61. Kumar, D. D. (2017, March). *Civic engagement through web-assisted problem-based learning in STEM for all*. A paper presented at the annual meeting of the Research Association of Minority Professors, Atlanta, GA.
60. Kumar, D. D. (2016, October). *Behind the scene factors in designing multimedia anchors for PBL in science*. A paper presented at the Annual Convention of the School Science and mathematics Association, Phoenix, AZ.
59. Lapp, S. I., & Kumar, D. D. (2016, October). K-12 STEM education: A mobile app and web-based curricular model. A paper presented at the Annual Convention of the School Science and mathematics Association, Phoenix, AZ.
58. Kumar, D. D. (2015, September). *Designing multimedia enhanced problem-based learning in nanoscale materials science*. A paper presentation at the International Society for Design and Development in Education Conference, Boulder, CO.

57. Kumar, D. D. (2015, March). *Analysis of multimedia enhanced PBL in nanotechnology: An exercise using selected learning sciences interest areas*. A virtual brief paper presented at the International Conference of the Society for Information Technology and Teacher Education, Las Vegas, Nevada.
56. Kumar, D. D. (2014, March). *Counterintuitive science instruction supported with wireless web*. A virtual brief paper presented at the International Conference of the Society for Information Technology and Teacher Education, Jacksonville, FL.
55. Rodney, B., & Kumar, D. D. (2014, March). *Development of a classroom instruction video analysis application: The case of SIVOS*. A paper presented at the International Conference of the Society for Information Technology and Teacher Education, Jacksonville, FL.
54. Kumar, D. D., Ridener, B., & Bindu, R. L. (2013, January). *Teaching nanoscale through integrated science and mathematics.* A paper presented at the Redefining education: Expanding Horizons, University Grants Commission Sponsored International Conference, Mumbai, India.
53. Fritzer, P., Kumar, D. D., & Bristor, V. J. (2013, January). *An alternative pathway to teaching in high need subjects in Florida.* A paper presented at the Redefining education: Expanding Horizons, University Grants Commission Sponsored International Conference, Mumbai, India.
52. Bristor, V. J., Fritzer, P. J., & Kumar, D. D. (2013, January). *A successful pathway to alternative certification*. A paper presented at the Hawaii International Conference on Education, Honolulu, Hawaii.
51. Bristor, V., Fritzer, P. J., Kumar, D. & Harlin, R. (2012, April). *Adventures in alternative certification: A tale of nimbleness and adaptation*. A paper presented at the 9th Annual Effective Pathways to Teaching Conference, Washington, DC.
50. Kumar, D. D. (2011, February). *Effect of web-based multimedia nanotechnology problem-based learning modules on science learning*. A poster presentation at the annual meeting of the American Association for the Advancement of Science, Washington, DC.
49. Kumar, D. D., Morris, J. D., & Tobias, K. M. (2008, January). *Simulation supported learning and teacher conceptual understanding of current electricity*. A paper presented at the annual meeting of the Association for Science Teacher Education, St. Louis, MO.
48. Libidinsky, L. J., Kumar, D. D., & Altschuld. J. W. (2008, January). *Effective collaborative efforts between colleges of education and sciecne and K-12 schools.* An interactive poster presented at the annual meeting of the Association for Science Teacher Education, St. Louis, MO.
47. Scarola, K., & Kumar, D.D. (2008, January). *Closed captions for teaching nanotechnology to students with special needs.* An interactive poster presented at the annual meeting of the Association for Science Teacher Education, St. Louis, MO.
46. Rodney, B. D., & Kumar. D. D. (2008, January). *Synchronized instructional video observation system (SIVOS): Analyzing TIMMS classroom interactions.* A paper presented at the annual meeting of the Association for Science Teacher Education, St. Louis, MO.
45. Kumar, D. D. (2007, February). *Interactive video anchors in problem based science learning: Implications for education involving nanomaterials.* A poster presented at the epiSTEME-2, an International Conference to Review Research on Science, Technology and Mathematics Education (organized by the Homi Bhabha Center for Science Education, Tata Institute of Fundamental Research), Mumbai, India
44. Morris, J, D., & Kumar, D. D. (2006, April). *Predicting scientific understanding of prospective elementary teachers from prior courses in, and attitude towards science.* A paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
43. Kumar, D. D. (2006, January). *Nano quiz performance of prospective teachers.* An interactive poster session presented at the annual meeting of the Association for Science Teacher Education, Portland, OR.
42. Kerr, R., & Kumar, D. D. (2006, January). *Nano world science activities.* An interactive poster session presented at the annual meeting of the Association for Science Teacher Education, Portland, OR.

41. Maslin-Ostrowski, P., & Kumar, D. D. (2006, January). *Policy considerations for laptop computers in science learning across continents*. A paper presented at the annual meeting of the International Congress for School Effectiveness and Improvement, Fort Lauderdale, FL.
40. Tobias, K., & Kumar, D. D. (2005, July). *Online chemistry in a virtual school.* A paper presented at the Technology in High School Chemistry online CONFCHEM conference, American Chemical Society Division of Chemical Education.
39. Kumar, D. D. (2005, June). *Teaching science with a computer simulation on water quality*. A paper presented at the annual meeting of the American Institute of Chemists, Philadelphia, PA.
38. Kumar, D. D. (2004, December). *A study of laptops in science education.* A poster presented at the epiSTEME-1, an International Conference to Review Research on Science, Technology and Mathematics Education (organized by the Homi Bhabha Center for Science Education, Tata Institute of Fundamental Research), Goa, India.
37. Kumar, D. D., & Altschuld, J. W. (2004, January). *Multiple evaluations of technology in science education*. An interactive panel paper presented at the annual meeting of the Association for the Education of Teachers in Science, Nashville, TN.
36. Kumar, D. D., & Morris, J. D. (2003, February). *Improving science in science education.* An interactive poster session presented at the annual meeting of the Association for the Education of Teachers in Science, St. Louis, MO.
35. Libidinsky, L. J., & Kumar, D. D. (2003, February). *Integrated science and language arts themes in elementary software.* An interactive poster session presented at the annual meeting of the Association for the Education of Teachers in Science, St. Louis, MO.
33. Altschuld, J. W., & Kumar, D. D. (2002, November). *Emerging systems challenges for evaluators: Exemplars drawn from science and technology education*. A panel presentation at the Annual meeting of the American Evaluation Association, Washington, DC.
32. Fritzer, P. J., & Kumar, D. D. (2002, April). *Elementary education majors' knowledge of American history.* A paper presented at the National Technology and Social Science Conference, National Social Science Association, Las Vegas, NV.
31. Kumar, D. D., & Hofwolt, C. A. (2002, January). *Using technology to improve science teacher education.* A paper presented at the Annual International Conference of the Association for the Education of Teachers in Science, Charlotte, NC.
30. Kumar, D. D., & Tobias, K. (2002, January). *Constructing science understanding in a simulation-based environment.* A demonstration presented at the Annual International Conference of the Association for the Education of Teachers in Science, Charlotte, NC.
29. Libidinsky, L. J., & Kumar, D. D., Hofwolt, C. A., & Bingham, A. (2002, January). *Science and language integration using technology.* A paper presented at the Annual International Conference of the Association for the Education of Teachers in Science, Charlotte, NC.
28. Kumar, D. D., & Libidinsky, L. J. (2001, March). *Teaching issue-oriented science and technology education: Curriculum and policy perspectives.* A paper presented at the Annual Meeting of the National Association for Science, Technology & Society, Baltimore, MD.
27. Kumar, D. D. (2001, February). *Improving elementary science teaching: An American perspective.* A paper presented at the First International Online Conference Opening Gates in Teacher Education, Mofet Institute, Tel Aviv, Israel.
26. Kumar, D. D., & Altschuld, J. W. (2001, February). *Policy ideas from contexts in technology integration in science education.* A paper presented at the First International Online Conference Opening Gates in Teacher Education, Mofet Institute, Tel Aviv, Israel.
25. Kumar, D., & Fritzer, P. J. (2000, April). *Science-Technology-Society education in Florida.* A paper presented at the Annual Convention of the National Association for Research in Science Teaching, New Orleans, LA.
24. Kumar, D. D., & Altschuld, J. W. (2000, March). *STS in the USA: What research says?*. A paper presented at the Annual Meeting of the National Association for Science, Technology & Society, Baltimore, MD.

23. Kumar, D. D., & Libidinsky, L. J. (2000, March). *Analysis of web-based STS instructional resources in the USA.* A paper presented at the Annual Meeting of the National Association for Science, Technology & Society, Baltimore, MD.
22. Kumar, D. D. (1999, June). *Science-Technology-Society education through Internet: Early findings.* A paper presented at the International Conference on Technology and Distance Education, Ft. Lauderdale, FL.
21. Baker, M., Tobias, K., & Kumar, D. D. (1999, March). *Application of the CPU Project simulations in science education.* An interactive demonstration presented at the International Conference on Math/Science Education and Technology, Association for the Advancement of Computing in Education, San Antonio, TX.
20. Kumar, D. D., & Altschuld, J. W. (1999, February). *Policy implications of contextual factors for educational technology.* A paper presented at the annual convention of the Association for Educational Communications and Technology, Houston, TX.
19. Kumar, D. D., & Berlin, D. F. (1998, April). *Analysis of Science-Technology-Society themes in state science curriculum frameworks in the United States.* A paper presented at the Annual Convention of the National Association for Research in Science Teaching, San Diego, CA.
18. Fritzer, P. J., & Kumar, D. D. (1998, April). *Science-Technology-Society: A curriculum strategy for reforming urban science and social studies education.* A paper presented at the Fourth National Urban/Multicultural Education Conference, Miami, FL.
17. Kumar, D. D., & Bristor, V. J. (1998, March). *Technology-based macrocontexts for teaching integrated science and language arts.* A paper presented at the International Conference of the Society for Information Technology and Teacher Education, Association for the Advancement of Computing in Education, Washington, DC.
16. Kumar, D. D., & Altschuld, J. W. (1997, April). *Contextual variables in technology based science teacher education.* A paper presented at the International Conference of the Society for Information Technology and Teacher Education, Association for the Advancement of Computing in Education, Orlando, FL.
15. Kumar, D. D., & Fritzer, P. (1997, March). *"What do you think?" Assessment techniques for STS education.* A paper presented at the Twelfth National STS Meeting and Annual Conference, National Association for Science Technology Society, Worcester, MA.
14. Altschuld, J. W., & Kumar, D. D. (1995, November). *Postscript: A theory-driven approach to evaluating context after a project is completed.* A paper presented at Evaluation '95 the annual meeting of the American Evaluation Association, Vancouver, BC.
13. Fritzer, P., & Kumar, D. D. (1995, November). *Critical thinking in social studies and science.* A paper presented at the Annual Convention of the National Council for the Social Studies, Chicago, IL.
12. Kumar. D. D., & Helgeson, S. L. (1995, April). *Computers in science assessment: Past, present and future.* A paper presented at the Annual Convention of the National Association for Research in Science Teaching, San Francisco, CA.
11. Kumar, D. D. (1995, March). *Science testing with computers: Trends and issues.* A paper presented at the Working Conference on Applications of Technology in the Science Classroom, Columbus, OH.
10. Altschuld, J. W., & Kumar, D. D. (1994, March). *Models of program evaluation in science education: A synthesis of literature sources.* An interactive poster session presented at the Annual Convention of the National Association for Research in Science Teaching, Anaheim, CA.
9. Kumar, D. D., Helgeson, S. L., & Fulton, D. C. (1994, March). *A survey of interactive video use in science teacher education in Ohio*. A paper presented at the Annual Convention of the National Association for Research in Science Teaching, Anaheim, CA.
8. Kumar, D. D., Smith, P. J., Helgeson, S. L., & White, A. L. (1994, March). *Concepts, applications and issues of advanced technologies in science education*. A paper presented at the Annual Convention of the National Science Teachers Association, Anaheim, CA.

7. Helgeson, S. L., & Kumar, D. D. (1993, October). *Applications of technology to science assessment*. A paper presented at the Annual Meeting of the School Science and Mathematics Association, Alexandria, LA.
6. Kumar, D. D., White, A. L., & Helgeson, S. L. (1993, April). *Effect of HyperCard and traditional performance assessment methods on expert-novice chemistry problem solving*. A paper presented at the Annual Convention of the National Association for Research in Science Teaching, Atlanta, GA.
5. Helgeson, S. L., & Kumar, D. D. (1993, April). *Technological applications in science assessment*. A paper presented at the Annual Convention of the National Science Teachers Association, Kansas City, MO.
4. Berlin, D. F., & Kumar, D. D. (1993, April). *The state of STS implementation in the United States and its implications*. A paper presented at the Annual Convention of the National Association for Research in Science Teaching, Atlanta, GA.
3. Kumar, D. D., & Berlin, D. F. (1993, January). *Status of Science-Technology-Society education in the United States*. A paper presented at the Eighth National STS Meeting and Technological Literacy Conference, National Association for Science Technology Society, Alexandria, VA.
2. Kumar, D. D., & Berlin, D. F. (1992, December). *Towards a model for implementing Science-Technology-Society education, Phase I: Status study*. A paper presented at the Regional Convention of the National Science Teachers Association, Charlotte, NC.
1. Hofwolt, C. A., Kumar, D. D., Altman, J. E. (1991, March). *HyperScience 456*. A display session presented at the Annual Convention of the National Science Teachers Association, Houston, TX.

Regional/State Presentations (N=12)

12. Kumar, D. D. & Morris, D. J. (2005, November). *Predicting scientific understanding of prospective elementary teachers from prior courses in science and attitudes toward science and mathematics.* A paper presented at the annual meeting of the Florida Educational Research Association, Miami, FL.
11. Kumar, D. D., & Waldman, J. N. (2004, July). *Sustainability education through interactive technology.* A computer display/poster presented at the 2nd Annual South Florida Caribbean Cooperative Ecosystem Studies Unit Science Forum, Davie, FL.
10. Altschuld, J. W., & Kumar, D. D. (2002, May). *Evaluation of science and technology education at the dawn of a new millennium.* A paper presented at the Annual Evaluators' Exchange Conference, Ohio Program Evaluators' Group, Columbus, OH.
9. Kumar, D. D., & Altschuld, J. W. (1998, October). *Context, technology and science education.* A paper presented at the annual meeting of the Southeastern Association for the Education of Teachers in Science, Timber Ridge, GA.
8. Kumar, D. D., & Fritzer, P. (1996, October). *Social studies and science as integrated curriculum.* A paper presented at the annual meeting of Florida Council for the Social Studies, Ft. Lauderdale, FL.
7. Kumar, D. D., & Fritzer, P. J. (1995, March). *Integrating science and history through measurement.* A paper presented at the South Florida Thinking Skills Conference, Miami, FL.
6. Altschuld, J. W., & Kumar, D. D. (1995, November). *Postscript evaluation: A theory driven approach to evaluating context after a project is completed.* A paper presented at the Annual Evaluators' Exchange Conference, Ohio Program Evaluators' Group, Columbus, OH.
5. Hofwolt, C. A., Kumar, D. D., & Johnston, J. D. (1995, November). *Single versus multiple observations: A comparative analysis of the instructional strategies of exemplary and novice elementary science teachers*. A paper presented at the Annual Conference of the Mid-South Educational Research Association, Biloxi, MS.
4. Kumar, D. D., & Fritzer, P. J. (1994, January). *Critical thinking in interdisciplinary science and social studies*. A paper presented at the South Florida Thinking Skills Conference, Miami, FL.
3. Kumar, D. D., Berlin, D. F., & Brownstein, E. M. (1993, April). *A status report on STS education by state and region*. A paper presented at the annual meeting of the Ohio Academy of Science, Youngstown, OH.

2. Kumar, D. D. (1992, November). *Meta-analysis of instruction-engagement research in science education*. A paper presented at the Annual Evaluators' Exchange Conference, Ohio Program Evaluators' Group, Columbus, OH.
1. Hofwolt, C. A., & Kumar, D. D. (1991, November). *A comparative study of the instructional strategies of exemplary and novice elementary science teachers*. A paper presented at the Annual Conference of the Mid-South Educational Research Association, Lexington, KY.

Other Presentations (N=13)

13. Rodriguez, S., & Kumar, D. D. (2013, November). *Science literacy anchored in nanotechnology*. A presentation at the Literary Feast, Florida Atlantic University, Davie and Broward College, Davie.
12. Kumar, D. D., Ramdin, G., Paramore, M., & Lacoude, S. (2012, February). *Web-assisted counterintuitive science teaching with wireless media*. A presentation at the Teaching with Technology Showcase, Florida Atlantic University, Davie.
11. Kumar, D. D. (2009, May), *Science education with nanoscale materials: Opportunities and challenges*. A presentation to the Royal Society of Edinburgh, Scotland, UK.
10. Kumar, D. D. (2002, May). *Evaluating technology in post-secondary science education*. Florida-Israel Institute Conference on Technology Issues in Higher Education. An interactive video conference by Florida Atlantic University, Davie, and Hadassah College Jerusalem.
9. Kumar, D. D. (2002, June). *The activist vs. industry dilemma in environmental education*. A commentary presented at the international e-conference on the Global Approaches to Environmental Democracy Seminar organized by The British Council, United Kingdom.
8. Kumar, D. D. (2001, August). *Contemporary education reform is missing key issues*. An Education Policy Panel discussion at the Annual Meeting of the Policy Studies Organization, San Francisco, CA.
7. Kumar, D. D., Tobias, K., & Baker, M. (1999, May). *Constructing physics understanding (CPU) in a computer supported learning environment*. A technical presentation. Davie, FL: Florida Atlantic University.
6. Kumar, D. D. (1998, June). *Capacitors.* A presentation to the CPU Project funded in-service. Davie, FL: Florida Atlantic University.
5. Kumar, D. D. (1997, January). *Approaches to teaching science.* A science in-service presentation at the Silver Ridge Elementary School, Davie, FL.
4. Kumar, D. D., & Helgeson, S. L. (1993, May). *New technologies affecting K-12 science education*. A paper presented at the Spring '93 Research Conference, College of Education, The Ohio State University, Columbus, OH.
3. Hofwolt, C. A., Kumar, D. D., & Altman, J. E. (1991, April). *HyperScience 456.* A display session at the Technology Training Conference for Colleges and Universities in Alabama (in conjunction with NSF Grant No. TPE 905-3826), Vanderbilt University, Nashville, TN.
2. Kumar, D. D. (1985, February). *Flow injection analysis and application to multielemental determination*. A paper presented at the Graduate Spring '85 Seminar Series, University of Louisville, KY.
1. Kumar, D. D. (1980, March). *The chemistry of insecticides*. A paper presented at the annual meeting of the Mar Ivanios College Chemistry Association, Mar Ivanios College, University of Kerala, Trivandrum, India.

Organized Conferences, Seminars & Outreach Efforts (N=11)

11. *Teaching science by "sidewalk safari,"* guest lecture by Dr. Cal DeWitt, STEM Education Laboratory, Florida Atlantic University, Davie, FL (Organizer, 2019)
10. *STEM Education Lab Informational Meeting*, Florida Atlantic University, Davie, FL (Organizer, 2017)
9. *The Distinguished International Visitor Lecture* of Indian Consular General (on "India-US partnership: A win-win situation"), Florida Atlantic University, Boca Raton, FL (Co-Organizer, 2010)

8. *The Distinguished International Visitor Lecture* of Kazakhstan Ambassador (on "Kazakhstan's nuclear disarmament: A global model for a safer world"), Florida Atlantic University, (Co-Organizer and Co-Presider with S. Baroni and H. Hanson, 2006)
7. *College of Education Research Exchange & Luncheon*, (Theme: Capacity Building in Research) Florida Atlantic University, Boca Raton, FL, (2006 Fall, Spring 2006, Fall 2005)
6. *Student Advisory Council (SAC) Annual Research Symposium*. Florida Atlantic University, Boca Raton, FL, (with SAC Leadership, Spring 2006, Fall 2007)
5. *Voyage Under the Stars.* A joint outreach effort of College and College of Education at Florida Atlantic University Davie and Buehler Planetarium and Observatory at Broward Community College, (2003, 2004, 2006)
4. *Technology Issues in Higher Education*, An interactive video conference held at Florida Atlantic University, Davie, Florida, USA and Hadassah College Jerusalem, Jerusalem, Israel, (with Rosen, N., 2002)
3. *Emerging systems challenges for evaluators: Exemplars drawn from science and technology education*. A panel presentation at the Annual meeting of the American Evaluation Association, Washington, DC, (with Altschuld, J. W., 2002)
2. *Working Conference on Applications of Technology in the Science Classroom.* The National Center for Science Teaching and Learning, Columbus, OH, (with Helgeson, S. L., & Smith, P. J., 1995)
1. *Computer technology and science assessment: A research and development perspective.* An interactive session held at the Annual Convention of the National Association for Research in Science Teaching, San Francisco, CA, (1995, April)