**DAVID DEVRAJ KUMAR**

Florida Atlantic University

3200 College Avenue

Davie, FL 33314

**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 major, (Physics & Mathematics minors), University of Kerala, India, 1978

**PRESENT ACADEMIC POSITIONS**

Professor of Science Education, Department of Teaching & Learning, College of Education, Florida Atlantic University, 1998-present

Director (Founding), STEM Education Laboratory, College of Education, Florida Atlantic University, 2015-present

**SELECTED VISITING/AFFILIATE APPOINTMENTS**

Visiting Fellow, Governance Studies, Brookings Institution, 2018-present

Visiting Faculty, Indian Institute of Technology Madras, India, December 2007

Guest Scholar, Governmental Studies Program, Brookings Institution, Summer 1996

**SELECTED PUBLICATIONS**

**Journal Articles**

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.

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.

Kumar, D. D., & Dunn, J. (2018). Self-reflections of undergraduate students on using web-supported counterintuitive science demonstrations. *Journal of Science Education and Technology, 27*(4), 362-368*.*

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.

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

Kumar, D. D. (2017). The need for nanometry education. *The Chemist, 91*(1), 32-33.

Kumar, D. D. (2016). Neuroscience basis of context in multimedia enhanced problem-based STEM learning. *The Researcher*, *1*(2), 1-8.

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

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.

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.

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.

Hill, J., Kumar, D. D., & Verma, R. K. (2014). Designing core concepts for a tertiary chemistry course. *The Chemist, 87*(1), 14-22.

Persin, R. C., & Kumar, D. D. (2014). Web-design, and NSES content and process standards analysis of teacher-published high school physics websites. *Physics Education, 30*(2), Article# 3.

Nair, P. B., Justinvictor, V. B., Daniel, G. P., Joy, K., Ramakrishnan, V., Kumar, D. D., & Thomas, P. V. (2014). Structural, optical, photoluminescence and photocatalytic investigations of Fe doped TiO2 thin films. *Thin Solid Films, 550*, 121-127.

Nair, P. B., Justinvictor, V. B., Daniel, G. P., Joy, K. James Raju, K. C., Kumar, D. D., & Thomas, P. V. (2014). Optical parameters induced by phase transformation in RF magnetron sputtered TiO2 nanostructured thin films. *Progress in Natural Science: Materials International, 24*(3), 218-225.

Fritzer, P., Bristor, V., Kumar, D., Harlin, R., & Brewer, E. A. (2014). Adventures in alternative teacher certification: A tale of nimbleness and adaptation or why Ralph Waldo Emerson was right to defend inconsistency. *Journal of Liberal Arts and Sciences, 19*(1), 92-103.

Hill, J., & Kumar, D. D. (2013). Challenges for chemical education: Implementing the ‘chemistry for all’ vision. *The Chemist, 86*(2), 27-32.

Hill, J., Kumar, D. D., & Verma, R. (2013). Challenges for chemical education: Engaging with green chemistry and environmental sustainability. *The Chemist,* *86*(1), 24-31.

Hill, J., Verma, R. K., & Kumar, D. D. (2013). Challenges for chemical education: Traversing the chemical sciences/materials science interface. *Journal of Materials Education*, *35*(1-2), 1-16.

Strate, J., Kumar, D. D., & Morris, J. D. (2013). Predictors of scientific understanding of middle school students: Socioeconomic status. *Eurasia Journal of Mathematics, Science & Technology Education, 9*(2), 155-165*.*

George, A., Thomas, P. V., & Kumar, D. D. (2013). Computational studies on the NMR spectra of 2-Aminophenol. *The Chemist, 86*(1), 15-19.

Daniel, G. P., Kumar, D. D., Justinvictor, V. B., Nair, P. B., Joy, K., Koshy, P., & Thomas, P. V. (2012). Indium doped ZnO films prepared by RF Magnetron Sputturing: Effect of substrate temperature on the strain-induced band gap*. Journal of Nanoscience and Nanotechnology*, *12*(3), 2503-2508.

Verma, R. K., Hill, J. O., Niinisto, L., Mojumdar, S. C., Kumar, D. D. (2012). A curriculum framework for education in calorimetry. *Journal of Materials Education, 34*(5-6), 161-174.

Verma, R. K., Hill, J. O., Niinisto, L., Mojumdar, S. C., Kumar, D. D. (2012). A curriculum framework for an advanced course in thermal analysis. *Journal of Materials Education, 34*(3-4), 133-150.

Kumar, D. D., Thomas, P. V., Morris, J. D., Tobias, K., Baker, M., & Jermanovich, T. (2011). Effect of current electricity simulation supported learning on the conceptual understanding of elementary and secondary teachers. *Journal of Science Education and Technology, 20*(2), 111-115. (Erratum in *Journal of Science Education and Technology, 20*(2), 116.)

Stewart, J. E., & Kumar, D. D. (2011). Strategies for integrating nanoscale science and technology into college biology. *Journal of Materials Education, 33*(1-2), 53-64*.*

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., Thomas, P. V., & Mahfuz, H. (2010). An overview of carbon nanotubes. *Journal of Materials Education, 32*(3-4), 153-162*.*

Kumar, D. D., Willems, P., & Hofwolt, C. A. (2009). Problem-based learning with video anchors: Applications and policy considerations. *Science & Society, 7*(1), 95-102.

Kumar, D. D., & Maslin-Ostrowski, P. (2008). Policy considerations for nanoscience education. *Journal of Materials Education, 30*(5-6), 385-388.

Kumar, D. D., Lapp, S. I., Marinaccio, P., & Scarola, K. (2008). Science literacy strategies anchored in nanotechnology. *School Science Review, 89*(329), 63-73.

Kumar, D. D., & Maslin-Ostrowski, P. (2008). The digital frontier: Policy issues and recommendations for laptop computers in science learning. *Journal for Computing Teachers*, Spring 2008.

Kumar, D. D., & Altschuld, J. W. (2008). University science and education faculty partnership in teacher preparation: Role of a technology innovation. *Science & Society,* 6(2), 197-202.

Kumar, D. D. (2007). Nanoscale science and technology in teaching. *Australian Journal of Education in Chemistry, 68*, 20-22.

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.

Furner, J. M., & Kumar, D. D. (2007). The mathematics and science integration argument: A stand for teacher education. *Eurasia Journal of Mathematics, Science & Technology Education, 3*(3), 185-189.

Kumar, D. D., & Morris, J. D. (2005). Predicting scientific understanding of prospective elementary teachers: Role of gender, education level, courses in science, and attitudes toward science and mathematics. *Journal of Science Education and Technology, 14*(4), 387-391.

Kumar, D. D. (2004). Analysis of laptop computers in science. *Science Education International, 15*(3), 201-208.

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. (2003). Need for comprehensive evaluation in science education. *The Review of Policy Research, 20*(4), 603-615.

Kumar, D. D. (2003). Trends in post-secondary science in the United States. *The Annals of the American Academy of Political and Social Science, 585*, 124-133.

Kumar, D. D., & Altschuld, J. W. (2002). Complementary approaches to evaluation of technology in science education. *Journal of Science Education and Technology, 11*(2), 179-191.

Kumar, D. D. (2002). Inclusion policy and science teaching: A view from the United States. *School Science Review, 83*(305), 107-112.

Kumar, D. D. (2001). Teaching STS via internet: A reflective evaluation and policy implications. *Bulletin of Science, Technology, & Society, 21*(2), 95-98.

Kumar, D. D. (2000). A study of education policy research at the Brookings Institution. *Higher Education Policy, 13*(3), 303-317.

Kumar, D. D., & Chubin, D. E. (2000). STS: Adding value to research and practice. *Journal of Science Education and Technology, 9*(2), 135-139.

Kumar, D. D., & Altschuld, J. W. (2000). Science, Technology, and Society: Policy implications. *Bulletin of Science, Technology & Society, 20*(2), 133-138.

Kumar, D. D., & Scuderi, P. (2000). Opportunities for teachers as policymakers. *Kappa Delta Pi Record, 36*(2), 61-64.

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

Altschuld, J. W., Kumar, D. D., Smith, W. D., & Goodway, J. D. (1999). The changing countenance of context-sensitive evaluations: Case illustrations. *Family and Community Health, 22*(1), 66-79.

Kumar, D. D., & Fritzer, P. J. (1998). A study of Science-Technology-Society education implementation in the state of Florida. *Journal of Social Studies Research, 22*(1), 14 18.

Kumar, D. D. (1997). Public education, money and social policies. *Policy Studies Journal, 25*(3), 489-491.

Kumar, D. D., & Berlin, D. F. (1996). A study of STS curriculum implementation in the United States. *Science Educator, 5*(1), 12-19.

Kumar, D. D. (1994). STS implementation: What does it say? *Bulletin of Science, Technology & Society, 14*(5/6), 284-286.

Kumar, D. D., Helgeson, S. L., & Fulton, D. C. (1994). A statewide study of interactive video use in science teacher education. *Journal of Instruction Delivery Systems, 8*(4), 28-34.

Kumar, D. D., & Berlin, D. F. (1993). STS policy implementation in the USA: A literature review. *The Review of Education, 15*(1), 73-83.

**Books**

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

Altschuld, J. W., & Kumar, D. D. (Eds.) (2002). *Evaluation of science and technology education at the dawn of a new millennium.* New York: Kluwer Academic/Plenum Publishers.

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

**Refereed Journal Theme Issues**

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. (Eds.) (2003). Science education policy: A symposium. *The Review of Policy Research, 20*(4), 561-645.

**Chapters**

Perez, K. & Kumar, D. D. (in review). STEM professional development policies in the United States: Trends & Issues. In Shelley, M., & Kiray, A. (eds.), *Research highlights in STEM education*. ISRES Publishing.

Fritzer, P. J., Kumar, D. D., & Bristor, V. J. (2013). An Alternative pathway to teaching in high need subjects in Florida. In Sinha, M. (ed.), *Redefining education: Expanding horizons*. New Delhi: Alfa Publications. (Presented at the Redefining Education Conference.)

Kumar, D. D. (2005). Sustainability through science-technology-society education. In Wildrer, P. A., Schroeder, E. D., and Kopp, H. (Eds.), *Global sustainability. The impact of local cultures. A new perspective for science, engineering, economics and politics.*  Weinheim: Wiley –VCH.

Altschuld, J. W., & Kumar, D. D. (2002). What does the future have in store for the evaluation of science and technology education? In Altschuld, J. W., & Kumar, D. D. (Eds.), *Evaluation of science and technology education at the dawn of a new millennium.* New York: Kluwer Academic/Plenum Publishers.

**Book Reviews and Other Refereed Publications**

Kumar, D. D., & Plant, J. E. (2004). [A review of Packer, M. (2001). *Changing classes. School reform and the new economy.* NY: Cambridge University Press.] *The Review of Policy Research, 21*(1), 137-138.

Kumar, D. D. (1999). Teacher is key to reform. *Kappa Delta Pi Record, 36*(1), 4.

Kumar, D. D., & Berlin, D. F. (1993). Status of Science-Technology-Society education in the United States. *Proceedings of the Eighth National Technological Literacy Conference*, ERIC CSS/SSE, pp. 166-168.

**Editorials**

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.

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

Kumar, D. D. (1999). *Why Johnney can't teach science? Scientific understanding of preservice elementary teachers*. Davie, FL: Florida Atlantic University.

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.

**Report to the Office of the Ohio Governor**

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.

**SELECTED PROFESSIONAL SERVICE**

**Editorial & Review Boards**

Editor-in-Chief, *The Chemist*, official refereed journal of American Institute of Chemists, 2012-Present

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

Editorial Review Board, *The Chemist,* 2003- Present

Founding Section Editor, Public Understanding of Chemistry, *The Chemist*, 2012-Present

Editorial Board, *Journal of Science Education and Technology,* 1995-Present

Editorial Board, *Bulletin of Science, Technology & Society*, 2014-2016

Editorial Review Board, *Journal of Computing Teachers,* 2009-2012

Editorial Board, *Indian Journal of Science and Technology*, 2008-2013

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

Editorial Advisory Board, *Policy Evaluation*, 2000-2001

Consulting Editor, Research Division, *Ed Tech Research & Development,* 1999-2007

Editorial Board, *The Review of Policy Research* (Formerly *Policy Studies Review*), 1999-2004

Manuscript Review Board, *Journal of Educational Computing Research*, 1998-2005

Review Board, *The Electronic Journal of Science Education,* 1996-2006

Editorial Board, *Journal of Elementary Science Education,* 1994-1997

Review Board, *McGill Journal of Education,* 1992-2004

**Professional Societies**

American Association for the Advancement of Science

Affiliate AIC Representative, Societal Impacts of Science and Engineering Committee, 2014-2017

 Reviewer, 2012 International Conference Symposium Proposals, 2011

The American Institute of Chemists

Chairman, Awards Committee, 2009-2016

 Awards Committee Member, 2007-Present

 Executive Committee, 2012-Present, 2002-2006

 Director at Large, 2006-Present

 President, 2006

Chairman, Speakers Bureau Committee, 2002-2006

 International Committee, 2002-2003

 Education Committee, 2002-2003

 Chairman, Publications Committee, 2012-present; Member 1996-01, 2007

 Government Activities Committee, 1994

 Qualifications and Admissions Committee, 1991

International Confederation for Thermal Analysis and Calorimetry

 Education Committee Member, 2010- 2017

Council of Scientific Society Presidents

 Science Education Committee, 2013-2014

 International Science Committee, 2006-2007

International Society for Design and Development in Education

 Member, Communications Committee, 2016-present

 Editorial Team Member, *ISDDE Newsletter*, 2015-Present

Member, Design with Technology Working Group (Topic: Audience & Marketing), 2015

**Doctoral Dissertation Committees**

Chair 14

Member 5

External/Overseas Examiner 4

**International/National/State/Local**

Member, Steering Committee, Nano Florida 2018 Conference, Florida Institute of Technology, Melbourne, FL, 2018

Member, Organizing Committee, International Conference on Education in Mathematics, Science & Technology, Marmaris, Turkey, 2017-2018

Member, U.S. Census Bureau National Advisory Committee on Racial, Ethnic, and Other Populations, 2014-2017 (Non-partisan appointment by U.S. Census Bureau Director)

Member, Commission on International Initiatives, Association of Public and Land-grant Universities, 2014-2017

Member, Planning Committee, Science & Mathematics Teacher Imperative (SMTI) National

Conference, Association of Public and Land-Grant Universities, 2014

Discussant, Six Pillars™ Strategic Planning Initiative, Talent Supply & Education, Greater Fort Lauderdale Alliance, 2012

Member, Board of Directors, Florida Fund for Minority Teachers, Inc. (FFMT), 2007-present (Non-partisan gubernatorial appointment) (Member, FFMT Strategic Planning Committee, 2016-present,

Member, FFMT Legislative Committee, 2008-present, Member, FFMT By-Laws Committee, 2007-2008)

Presider, Opening Ceremony, International Congress for School Effectiveness and Improvement, Fort Lauderdale, FL., 2006

Member, Academic Advisory Committee, Florida-Israel Institute, 2005-2008

Invited Participant, US Secretary’s Science Summit, Washington, DC, 2004

Panel Member, *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., 2002

Co-Organizer, Florida-Israel Institute Conference on Technology Issues in Higher Education, jointly organized by Florida Atlantic University Davie and Hadassah College Jerusalem, 2002

Panel Member, *Contemporary education reform is missing key issues*. An Education Policy Panel discussion at the Annual Meeting of the Policy Studies Organization, San Francisco, CA., 2001

Member, Evaluation Committee, Teacher Education Alliance, Florida Atlantic University and Broward County School District, 1996-2001

Member, Research Committee, Nova Center for Applied Research and Professional Development, Broward County School District, 1996-1998

Member, Evaluation Team, Nova Innovation Zone Project, Broward County School District, 1995-1996

Invited Participant, Beyond Goals 2000: The Future of National Standards and Assessments in American Education, Brookings Institution, 1994

**SELECTED AWARDS & RECOGNITIONS**

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

Member, The International Council on Materials Education, 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

Faculty Member of the Year, Florida Atlantic University Broward Achievement Awards, 2009-2010

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, 2006-2008

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

Outstanding Faculty Position Paper Award, Southeastern Association for the Education of Teachers in

Science, 2001

Member, European Academy of Sciences and Arts, 2002 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

Outstanding Faculty Position Paper Award, Southeastern Association for the Education of Teachers in

Science, 1997

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

Outstanding Faculty Position Paper Award, Southeastern Association for the Education of Teachers in

Science (co-recipient), 1996

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

AERA Evaluation Fellow, (supported by AERA Evaluation and Dissemination Internship Program, a

component of AERA Grants Programs), 1994-1996

Governor’s Official Recognition for Services in Education, State of Ohio, 1993