

DAVID DEVRAJ KUMAR

Florida Atlantic University

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PRESENT ACADEMIC POSITION

Professor of Science Education (with Graduate Faculty Status), College of Education, Florida Atlantic University

EDUCATION

Doctor of Education, Science Education (Chemistry cognate), Vanderbilt University, 1991

Master of Science, Analytical Chemistry, University of Louisville, 1987

Master of Science, Chemistry, University of Kerala, 1980

Bachelor of Science, Chemistry major, (Physics & Math minors), University of Kerala, 1978

CONTINUING EDUCATION (selected)

Technology and Characterization at the Nanoscale, Cornell Nanoscience Facility, 2011

Nanoconcepts in Higher Education, Nanoscience Faculty Workshop by NCLT, Cal-Poly, 2006

VISITING APPOINTMENTS (selected)

Scholar in Residence, School of Chemical Sciences, Kannur University, 2011 December

Visiting Faculty, Indian Institute of Technology Madras, 2007 December

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

NATIONAL SCIENCE PROFESSIONAL SOCIETY LEADERSHIP

Member, Board of Directors, The American Institute of Chemists, Inc., 2006-present

Interim President, The American Institute of Chemists, Inc., 2006

AWARDS AND HONORS (selected)

STEM Champion Award (College Level), International STEM Education Association, 2013

Member, The International Council on Materials Education, 2013 elected

Presidential Citation of Merit, The American Institute of Chemists, 2013

Fellow, Kerala Academy of Sciences, 2013 elected

Editor-in-Chief, *The Chemist*, 2012-present

Honorary Fellow, Gujarat Science Academy, India, 2011 elected

Faculty Member of the Year, Florida Atlantic University Broward Achievement Awards, 2009-10

Chairman, Awards Committee (AIC Gold Medal, Chemical Pioneer), 2009-present

Sir Ron Nyholm Education Prize, Royal Society of Chemistry (UK), 2008-09

Fellow, American Association for the Advancement of Science, 2008 elected

Member, Council of Scientific Society Presidents, 2006 inducted

Chemical Pioneer Award, The American Institute of Chemists, 2006

Award in Recognition and Appreciation for Outstanding Leadership and Service to the College of Education, College of Education, Florida Atlantic University, 2007

Chairman, Search Committee for Mott Eminent Scholar Chair in Community Education, Florida Atlantic University, 2006-07

Researcher of the Year, College of Education, Florida Atlantic University, 2003-04

Distinguished Teacher of the Year Award, College of Education, Florida Atlantic University, 2003-04

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

Member, Academia Scientiarum et Artium Europaea (Salzburg, Austria), 2002 elected

Member, Caribbean Academy of Sciences, 2001 elected

Outstanding Faculty Position Paper Award, Southeastern Association for the Education of Teachers in Science, 2001

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

Member, Phi Kappa Phi Honor Society, 1997 inducted

Outstanding Faculty Position Paper Award, Southeastern Association for the Education of Teachers in Science (co-recipient), 1996

Fellow, The American Institute of Chemists, 1995 elected

University Research Award, Florida Atlantic University, 1995

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

Member, Kappa Delta Pi International Honor Society in Education, 1991 inducted

COMMUNITY ENGAGEMENTS AND COLLABORATIONS

Fort Lauderdale Museum of Discovery and Science

Informal Science Education projects involving undergraduate students, 2013-present

Buehler Planetarium and Observatory at Broward College

Informal Science Education projects involving undergraduate students, 2013-present

Arrange Undergraduate student visits for education resource, 2003-present

Co-Developed the *Voyage Under the Stars*, a joint resource outreach, 2006, 04, 03

South Florida Educational Research Alliance

Preparation of collaborative research studies and grant proposals in collaboration with Broward County School District and local universities, 2012-present

Florida Chamber Foundation

Discussant, Six Pillars™ Strategic Planning Initiative, Talent Supply & Education, 2012

Broward Education Foundation

Grant Reviewer, 1998, 2001

Pembroke Pines FSU Charter Elementary and Middle Schools, Florida

Principal Investigator of IRB approved research and doctoral dissertation projects, 2002-present

Broward, Palm Beach and/or Okeechobee County School Districts, Florida

Black Male Success Task Force Member, 2012

Guest-Teach Science Lessons in local K-12 classrooms, 2009-present

Co-Principal Investigator of Transition to Teaching Project involving Broward, Palm Beach and Okeechobee County School Districts, 2006-12

Panel of Judges, Broward County Science Fair, 2003, 04

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

FAU-Team Leader of the CPU Project summer workshops for elementary and secondary school teachers of Broward County School District, 1996-2000

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

Panel of Judges, Science, The 13th Annual Silver Knight Awards, 1996

Evaluation Team Member, Nova Innovation Zone Project, Broward County School District, 1995-96

Principal Investigator of several IRB approved research and doctoral dissertation projects, 1993-2012

Broward College/Community College

Over two decades of teaching experience at the FAU Davie Campus partnering 2+2 with the neighboring Broward College (Former Broward Community College), 1993-present

Chaired two dissertations of Broward Community College faculty members, 2010, 2006

Served as a Member of the Dean of Florida Atlantic University/Broward Community College Library Search Committee, 2004-05

Served as a Member, of Advisory Committee, Florida Atlantic University/Broward Community College Library & Learning Resources, 2000-02

Served as the Representative of COE to the Florida Atlantic University/Broward Community College Library, 1999-2000

Served as an Advisor to Community College Transfer Students Orientation/Advisement, 1993-1996

INVITED/ ENDOWED/ NAMED LECTURES & PRESENTATIONS

Emmett Carmichael Members and Fellows Lecture, *The Chemist: Looking forward*. The American Institute of Chemists, 2013

Invited Lecture, *Problem-based learning with interactive video anchors: A case for chemistry*. Chemistry Education Research Seminar, The Catholic University of America, Washington, DC., 2013

Invited Lecture for NAAC Quality Evaluation, *Problem-based science learning with technology*, Department of Education, University of Kerala, 2013

Invited Lecture, *A learning sciences perspective of science learning with technology*, International Education Meet 2012, Education for Global Excellence, Trivandrum, India, 2012

Erudite Lecture Series (sponsored by the Kerala State Higher Education Council under the Erudite Scheme), Kannur University, India, 2011

Keynote Address, Inaugural Session, The 'Erudite' – Scholar in Residence Program, Kannur University, India, 2011

Sir A. Ramaswamy Mudaliar Memorial Lecture, *Trends in university science*, University of Kerala, 2011

Invited Lecture, *Science through experiential learning: Research and practice*, Mar Theophilus Training College Internal Quality Sustenance Cell Regional Colloquium, India, 2011

Emmett Carmichael Members and Fellows Lecture, *Chemistry literacy: What can be done?* The American Institute of Chemists, 2010

Special Invited Lecture, *Problem-based science learning with nanotechnology using web-based video anchors*, Indian Science Congress Association, 2010

Invited Lecture, *Sustainable approaches to promote civic science literacy in the United States*, The Catholic Academy of Sciences in the United States of America, 2010

Sir Ron Nyholm Lecture (sponsored by the Royal Society of Chemistry), *Pathways to (civic) chemistry literacy*, University of Edinburgh; University of Birmingham; Queen's University at Belfast; Manchester Metropolitan University; University of Hull, 2009

Invited Lecture, *Science education with nanoscale materials: Opportunities and challenges*, A presentation to selected staff at the Royal Society of Edinburgh, UK, 2009

Invited Lecture, *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

Invited Lecture, *Teaching engaging science*, Faculty Improvement Program, St. Thomas Residential School, Trivandrum, India, 2009

Distinguished Lecture, *Approaches to interactive video anchors in problem-based science learning*, Institute of Electrical and Electronics Engineers Education Society, 2008

Invited Lecture, *Problem based science learning with video anchors: Implications for nanoeducation*, University of Canterbury at Christ Church, New Zealand, 2008

Invited Lecture, *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

Invited Lecture, *Critical role of research*, First year M.Sc. Chemistry students, Mar Ivanios College, India, 2007

The 2nd Samarendra Nath Sen Memorial Lecture, *Sustainable science education strategies for the general public*, Indian Association for the Cultivation of Science, 2007

Chemical Pioneer Lecture, *Factors impeding classroom chemistry*, The American Institute of Chemists, 2006

Invited Presentation, *Problem based science learning anchored in nanotechnology*, Researching Practices Conference, Faculty of Education, Cambridge University, United Kingdom, 2005

Invited Lecture, *Science education in the USA*, Department of Science Education, University of Kerala, India, 2005

Invited Poster Presentation, *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

Invited Presentation, *Understanding interactive media in science education*, Caribbean Academy of Sciences annual meeting, Jamaica, 2002

Invited Lecture, As part of winning the Outstanding Faculty Position Paper Award, *Challenges facing teacher education in science*, Annual meeting of the Southeastern Association for the Education of Teachers in Science, 2001

Invited Lecture, *Teaching science*, First Annual Education Symposium, Broward Community College South Campus, 2000

Invited Lecture, As part of winning the Outstanding Faculty Position Paper Award, *Science teacher education in an era of standards based reform*, Annual meeting of the Southeastern Association for the Education of Teachers in Science, 1997

Invited Lecture, (co-recipient) As part of winning the Outstanding Faculty Position Paper Award, *Considerations for networking for better practices in science education*, Annual meeting of the Southeastern Association for the Education of Teachers in Science, 1996

Invited Presentation, *Strategies for reforming chemistry education*, Professional Issues in Chemical Education II: Toward the 21st Century, The American Institute of Chemists, 1996

Invited Presentation, *Evaluation of a multimedia project in science education: Policy implications*. Center for Educational Computing Initiatives at the Massachusetts Institute of Technology, 1995

Invited Lecture, *Technology applications in science education*, Fall '95 Research Colloquium, Broward Faculty Senate, Florida Atlantic University, 1995

PROGRAM ACTIVITIES

Graduate Supervision

Doctoral Students: Chair(ed) 13, Advised 30, Member 5
Specialist students: Chair(ed) 3
Master's Students: Advised 50+

Quality Enhancement Program

Mentor, *Science literacy strategies for problem based learning in nanotechnology*, Funded Undergraduate Research, Florida Atlantic University, 2012-2013

PROFESSIONAL SOCIETY OFFICES

Council of Scientific Society Presidents
Science Education Committee, 2013-Present
International Science Committee, 2006-07

Association of Public and Land-Grant Universities
Science & Mathematics Teacher Imperative (SMTI) National Conference Planning Committee, 2014

Tallahassee Scientific Society
Gorri Lecture Series Committee, 2014-

Association for Science Teacher Education
Oversight Committee, 2006-09
Equity Committee, 2003-06
Liaison, Communications Committee, 2003-05
Electronic Communications Ad Hoc Committee, 1996-97
Proposal Reviewer, 1999, 2002, 2005 International Conferences
Presider, Paper Session, 2008

National Association for Research in Science Teaching
Research Committee, 1998-01
Outstanding Paper of the Year Award Committee, 1994-95
Organizer, *Computer technology and science assessment*, an interactive session at the Annual meeting, San Francisco, CA, 1995
Program Committee, 1992-93

Presider, Two sessions, NARST Annual meeting, Atlanta, GA., 1993
 American Association for the Advancement of Science
 Reviewer, 2012 International Conference Symposium Proposals, 2011
 The American Institute of Chemists (Fellow)
 Interim President, 2006
 Awards Committee Member, 2007- Present
 Director at Large, 2006- Present
 Chairman, Speakers Bureau Committee, 2002-06
 Education Committee, 2002-03
 Publications Committee, 1996-01, 2007
 Government Activities Committee, 1994
 Qualifications and Admissions Committee, 1991
 Policy Studies Organization
 Co-Chairman, Internet Committee, 2002-04
 Vice President, 2002-04 (Long Range Planning and Internet Planning)
 Council Member, 2001-02
 Ad Hoc Virtual Advisory Committee, *The Review of Policy Research*, 2003
 National Association for Science, Technology & Society
 Reviewer, Graduate Student Paper Contest, 2001
 Presider, STS Research session, Annual meeting, Baltimore, MD, 2000
 International Confederation for Thermal Analysis and Calorimetry
 Education Committee Member, 2010- Present
 Association for Educational Communications and Technology
 Evaluation of Media Programs Committee, 1996-99

JOURNAL EDITORIAL & REVIEW BOARDS

Founding Section Editor, Public Understanding of Chemistry, *The Chemist*, 2012- Present
 Editorial Review Board, *Journal of Nano Education*, 2011-Present
 Editorial Review Board, *Journal of Computing Teachers*, 2009-12
 Editorial Board, *Indian Journal of Science and Technology*, 2008-13
 Editorial Board, *Journal of Materials Education*, 2007-Present
 Editorial Team, *e-Journal of the Caribbean Academy of Sciences*, 2007-Present
 Guest-Editor (main), *Journal of Science Education and Technology*, 2005, 1995
 Editorial Board, *Policy Futures in Education*, 2004-Present
 Editorial Review Board, *The Chemist*, 2003- Present
 Guest Editor (main), *The Review of Policy Research*, 2003
 Editorial Advisory Board, *Policy Evaluation*, 2000-01
 Consulting Editor, Research Division, *Ed Tech Research & Development*, 1999-07
 Editorial Board, *The Review of Policy Research* (Formerly *Policy Studies Review*), 1999-04
 Manuscript Review Board, *Journal of Educational Computing Research*, 1998-05
 Review Board, *The Electronic Journal of Science Education*, 1996-06
 Editorial Board, *Journal of Science Education and Technology*, 1995-Present
 Editorial Board, *Journal of Elementary Science Education*, 1994-97

Review Board, *McGill Journal of Education*, 1992-2004
Editorial Board, *The Chemist*, 1992-96
Editorial Board, *Journal of Instructional Psychology*, 1992-95

Occasional/Ad Hoc Reviewer

Journal of Nano Education, 2011
Journal of Computer Assisted Learning, 2011
Chemical Education Journal, 2006
Asia-Pacific Forum on Science Learning and Teaching, 2005
Science Education, 2004- Present
The Chemical Educator, 2000-02
Models for science teacher preparation, NY: Kluwer Academic Press, 2001
JAI/Ablex Publishing Corp., Elsevier Science, 2000
Educational Technology Research & Development, 1998
Policy Studies Review, 1998
Science teacher preparation: An international perspective, AETS graph, 1997
Journal of Educational Psychology, 1992-94
Journal of Science Teacher Education, 1992-93
Educational Measurement: Issues and Practice, 1992
Journal of the American Society for Information Science, 1991-95
Teaching Education, 1991-92
Educational Psychologist, 1990-91

PUBLICATIONS

Books, Theme Issues, and Proceedings

Kumar, D. D. (Ed.). (in progress). *Classic papers from The Chemist*. Philadelphia, PA: The American Institute of Chemists.

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

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.

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.

Kumar, D. D., & Tobias, S. (Eds.) (1995). Computer-based science assessment. *Journal of Science Education and Technology*, 4(1), 1-96.

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.

Refereed Journal Articles

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

Hill, J., & Kumar, D. D. (forthcoming). Challenges for chemical education: Implementing the "chemistry for all" vision. *The Chemist*.

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.

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

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.

Nair, P. B., Justinvicor, V. B., Daniel, G. P., Joy, K. James Raju, K. C., Kumar, D. D. , & Thomas, P. V. (in review). Optical parameters induced by phase transformation in RF magnetron sputtered TiO₂ nanostructured thin films.

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.

Stewart, J., E., Kumar, D. D., & Thomas, P. V. (2013). Analysis of selected secondary biological science websites for content, instructional strategies and assessment. *Education India*, 2(3), 101-128

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

Hill, J., Kumar, D. D., & Verma, R. K. (in review). Designing core concepts for a tertiary chemistry course. *The Chemist*.

Kumar, D. D., & Hill, J. (in preparation). *Challenges for science education: Enabling sustainable energy production from carbon-neutral energy sources*.

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

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. (2010). Problem-based learning in nanotechnology with web-based video anchors. *Psycho-Lingua*, 40(1&2), 148-154.

Kumar, D. D. (2010). Science education with nanotechnology. *Pedagogics*, 8(1), 6-9.

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

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., and 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. (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.

Kumar, D. D. (2007). Interactive video anchors in problem based science learning: Implications for education involving nanomaterials. In Natarajan, C. & Choski, B. (eds.), *epiSTEME-2 International conference to review research on science, technology and mathematics education. Proceedings*. New Delhi: Macmillan India Ltd.

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. (2006). Nano world of science and technology. *The Chemist*, 83(1), 7-10.

Kumar, D. D., & Scarola, K. (2006). Nanotechnology and closed captioned videos: Improving opportunities for teaching science to ESL students. *Asia-Pacific Forum on Science Learning and Teaching*, 7(2), Article 3. Available at: http://www.ied.edu.hk/apfslt/v7_issue2/kumar/

Tobias, K., & Kumar, D. D. (2006). Teaching chemistry online. *The Chemist*, 83(2), 6-9.

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. (2005). Alternate forms of salt bridges. *Chemical Education Journal*, 8(15) [Online]. Available: <http://www.juen.ac.jp/scien/cssj/cejrnIE.html>

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). Technology in science teacher education: Discussion of selected applications with insights for research. *School Science Review*, 84(309), 99-104.

Kumar, D. D. (2003). Analyzing chemistry problem solving using computers. *Chemical Education Journal*, 6(2) [Online]

Available: http://chem.sci.utsunomiya-u.ac.jp/v6n2/kumar/kumar_abs.html

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

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.

Fritzer, P. J., & Kumar, D. D. (2002). What do preservice elementary teachers know about American history? *Journal of Social Studies Research*, 26(1), 51-61.

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. (2001). Computer applications for balancing chemical equations. *Journal of Science Education and Technology*, 10(4), 347-350.
- Kumar, D. D., Ramasamy, R., & Stefanich, G. (2001). Science for students with visual impairments: Teaching suggestions and policy implications. *The Electronic Journal of Science Education*, 5(3) [Online]
Available: <http://unr.edu/homepage/crowther/ejse/kumar2etal.html> (An adapted version in Digest.)
- Kumar, D. D. (2000). Chemistry for elementary teachers. *The Chemist*, 77(4), 7-8.
- Kumar, D. D. (2000). A study of education policy research at the Brookings Institution. *Higher Education Policy*, 13(3), 303-317.
- Kumar, D. D., & Helgeson, S. L. (2000). Effect of gender on computer-based chemistry problem solving: Early findings. *The Electronic Journal of Science Education*, 4(4) [Online]
Available: <http://www.unr.edu/homepage/crowther/ejse/kumaretal.html>
- Kumar, D. D., & Libidinsky, L. J. (2000). Analysis of science education reform: Resources on the World Wide Web. *American Secondary Education*, 28(4), 16-21.
- 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.
- Kumar, D. D., & Bristor, V. J. (1999). Integrating science and language arts through technology-based macrocontexts. *Educational Review*, 51(1), 41-53.
- Kumar, D. D. (1999). Science teacher education in an era of standards based reform: Policy perspectives. *Contemporary Education*, 70(2), 13-17.
- 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., & Altschuld, J. W. (1999). Contextual variables in technology-based science teacher education. *Journal of Technology and Teacher Education*, 7(1), 75-81.
- Kumar, D. D., Berlin, D. F. (1998). A study of STS themes in state science curriculum frameworks in the United States. *Journal of Science Education and Technology*, 7(2), 191-197.

- 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. (1998). Chemical education in an era of information technology. *The Chemist*, 75(1), 3-4.
- Kumar, D. D., & Sherwood, R. D. (1997). Hypermedia in science and mathematics: Applications in teacher education, problem solving and student testing. *Journal of Educational Computing Research*, 17(3), 249-262.
- Kumar, D. D., & Whitehurst, M. (1997). Teaching science through physical education. *Science Activities*, 34(2), 31-35.
- Kumar, D. D., & Wilson, C. L. (1997). Computer technology, science education and students with learning disabilities. *Journal of Science Education and Technology*, 6(2), 155-160.
- Kumar, D. D. (1997). Teaching science and technology issues: Curriculum perspectives. *Bulletin of Science, Technology & Society*, 17(4), 187-188.
- Kumar, D. D. (1997). Public school choice and science education: A survey of preservice elementary teachers. *Contemporary Education*, 68(3), 170-173.
- Kumar, D. D. (1997). Public education, money and social policies. *Policy Studies Journal*, 25(3), 489-491.
- Kumar, D. D., & Whitehurst, M. (1997). Integrating science and physical education. *Kappa Delta Pi Record*, 33(2), 72-73.
- 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., & Helgeson, S. L. (1996). Effect of computer interfaces on chemistry problem solving among various ethnic groups: A comparison of Pen-Point and Powerbook computers. *Journal of Science Education and Technology*, 5(2), 121-130.
- Kumar, D. D., & Helgeson, S. L. (1995). Trends in computer applications in science assessment. *Journal of Science Education and Technology*, 4(1), 29-36.
- Kumar, D. D. (1995). Reforming precollege chemistry education for the 21st century. *The Chemist*, 72(4), 9-11.
- Altschuld, J. W., & Kumar, D. D. (1995). Program evaluation in science education: The model perspective. *New Directions for Program Evaluation*, 65, 5-17.
- Kumar, D. D. (1995). Intelligent educational systems for anchored instruction? *Tech Trends*, 40(1), 33-35.
- Kumar, D. D. (1995). Assessing science learning via computer technology. *Speculations in Science and Technology*, 18(4), 287-293.

- Kumar, D. D., Helgeson, S. L., & White, A. L. (1994). Computer technology-cognitive psychology interface and science performance assessment. *Educational Technology Research & Development*, 42, 6-16.
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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.

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.

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.

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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.

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.

Kumar, D. D. (2009, May). *Science education with nanoscale materials: Opportunities and challenges*. A presentation to the Royal Society of Edinburgh, Scotland, UK.

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.

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.

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.

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.

Kumar, D. D. (1998, June). *Capacitors*. A presentation to the CPU Project funded in-service. Davie, FL: Florida Atlantic University.

Kumar, D. D. (1997, January). *Approaches to teaching science*. A science in-service presentation at the Silver Ridge Elementary School, Davie, FL.

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.

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.

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.

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

College of Education Research Exchange & Luncheon, (Theme: Capacity Building in Research) Florida Atlantic University, Boca Raton, FL., (2006 Fall, Spring 2006, Fall 2005)

Student Advisory Council (SAC) Annual Research Symposium. Florida Atlantic University, Boca Raton, FL., (with SAC Leadership, Spring 2006, Fall 2007)

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)

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)

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)

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)

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)

SERVICE

National/State/Local

Proposal Reviewer, Woods Hole Sea Grant Program, 2013

Invited Participant, *RESPECT, National Conversation About the Teaching Profession*, U.S. Department of Education (Atlanta), FAU Davie, 2012

Member of Judging Panel, Best Paper Presentation Award, International Seminar and 8th Annual Convention, University of Kerala and Council for Teacher Education (Also served as Moderator of Themed Presentations), 2009

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

Proposal Reviewer, The 3rd International Conference on Education and Information Systems: Technologies and Applications (EISTA '05), 2005

Member, CSTD-Advisory [Electronic] Working Group, United Nations Commission on Science and Technology for Development, 2003

Member, Council for Emerging National Security Affairs, 2002-08

Grant Reviewer, Tier 2, Technology Innovation Challenge Grant Competition, U. S. Department of Education, (Washington, DC.), 1999

Grant Reviewer, Tier 1, Technology Innovation Challenge Grant Competition, U. S. Department of Education, (Miami, FL.), 1999

Content Reviewer, Elementary teacher content (ETC) project initial technical review, A proposal by Barry University, 1996

Coordinating Council Member, Higher Education Collaborative for Excellence in Teacher Preparation in Science, Mathematics and Technology, The Gold Coast Region V of Higher Education Consortium for Mathematics, Science and Technology, 1994-95

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

Member, Florida Higher Education Consortium for Mathematics, Science and Technology, 1993-95

Reviewer, *Computing in Other Disciplines*, Two-Year College Computing Curricula Task Force, 1992

Media Resource Service in Science Education, Scientists' Institute for Public Information, 1991-94

Panel of Judges, Annual Convention of the Tennessee Junior Academy of Science, 1991

Panel of Judges, Chemistry projects at the Annual Science Fair at Montgomery Bell Academy, Tennessee, 1990

Panel of Judges, Southeastern Indiana Regional Science Fair, 1986

University

Member, Research Task Force, College of Education, 2013-present

Member, Research Committee, College of Education, 2013-present, 2005–12

Participant, Collaborative Planning Focus Group 3, STEM Summit, Florida Atlantic University, 2013

Participant, STEM Critical Conversations Group 6, STEM Summit Florida Atlantic University, 2013

Member, Outstanding Dissertation Award Committee, College of Education, 2011-12; 2013-14

Member, Selection Committee, Broward Achievement Awards, 2011

Member, Advisory Council for University Research and Graduate Studies, 2005-07

Member, Graduate Programs Committee, College of Education, 2005-07

Chair, Committee to Develop the Search Process for Eminent Scholar in Community Education, College of Education, 2005-06

Member, Review Committee, New Project Development Grants, 2005

Member, Dean of University/College Library Search Committee, 2004-05

Organizer, Curriculum and Instruction Doctoral Program Open House, 2003

Faculty Sponsor, COE Student Advisory Council Research Symposium, 2002-

2002-Present Member, COE Davie Graduate Assistants Selection Committee, 2002-2008

Served as a Mentor on record for three faculty members, 2002-06

Member, General Policy Advisory Committee, University/College Library, 2002-05

Member, Promotion and Tenure Committee, College of Education, 2002-04

Member, Graduate Programs Subcommittee, Program Assessment Committee, 2002-04

Member, Chair of Department of Teacher Education Search Committee, 2002-03

Member, Advisory Committee, University/College Library & Learning Resources, 2000-02

Member, Review Committee, Presidential Research Development Award Program, 2000

Member, Department Research Core Discussion Committee, 1999-04

Member, University Grant-in-Aid Selection Committee, 1999-2000

Representative of COE, University/College Library Committee, 1999-2000

Member, COE Davie Technology Committee, 1998-2000

Coordinator, COE Davie Relocation, 1998

Reviewer, Validation Study of Teacher Certification Competencies and Skills, 1998

Member, Department Promotion and Tenure Guidelines Revision Committee, 1997-99

Member, COE Davie Multimedia Committee, 1997

Member, Selection Committee, Broward Achievement Awards, 1996

Member, COE Student Advisor (Positions I and II) Search Committees, 1996

Alternate Coordinator, FAU Davie Facility Team, Emergency Operations, 1995-99

Coordinator, Department World Wide Web Home Page Development, 1995-96

Co-Chairman, Department Mission Statement Committee, 1995

Member, Several Faculty Search Committees, 1994-

Member, COE Davie Distance Learning Committee, 1994-96

Member, COE Davie Educational Technology Advisory Committee, 1994-95

Content Reader, Science for all educators, Florida Science Framework Project, 1994

Advisor, Community College Transfer Students Orientation/Advisement, 1993-96

Member, Coordinating Committee, Internship/Induction Teaching Program, Vanderbilt University, 1990-91

INTERNATIONAL EDUCATION

Advisory Committee Member, 2013-2014

- International Conference on Advanced Trends in Engineering and Technology, Vimal Jyothi Engineering College, Kannur, India

Florida Atlantic University

India Task Force Member, 2010–2011

- Canvass university-wide interest in building capacity for promoting academic partnerships with universities and colleges in India
- Facilitate international educational collaborations

Invited Guest, 2012, 11, 09

- Explored research/academic collaborations with institutions in India such as Indian Institute of Space Science and Technology; Nanoscience Center and College of Education at Karunya University; Center for Education, Research, Innovation and Development at Mitraniketan

Invited Guest, 2011

- Greet and Meet Dinners honoring senior cabinet ministers, high level parliamentary delegations and diplomats from India to discuss bilateral relations organized by the Global Organization of People of Indian Origin USA Chapter

Visiting Team Member, 2010

- Explored academic and research collaborations with Vrije University, and Anna Van Rijn College in The Netherlands, and KSV University in Gujarat, India

Co-Organizer, 2010

- The Distinguished International Visitor Lecture of Indian Consular General on “India-US partnership: A win-win situation”

Liaison, 2007

- Worked with College of Engineering and university administrators arranging the visit of IITM representative to explore collaborations leading to MoU

Co-President (with S. Baroni and H. Hanson), 2006

- The Distinguished International Visitor Lecture of Kazakhstan Ambassador (on “Kazakhstan’s nuclear disarmament: A global model for a safer world”)

Reviewer, 2005–2007

- Guidelines for academic partnerships with selected Indian universities

Invited Participant, 2005

- Human Trafficking Conference organized by the Civil Rights Division of the US Department of Justice

Thin Film Lab, Mar Ivanios College

Co-Organizer, Fall 2009

- Arranged the visit of US industrialist and fluorine chemist to explore collaborations

Florida-Israel Institute

Member, Academic Advisory Committee, 2005-2008

- Policy development and facilitation of student and faculty collaborations between the State of Florida (USA) and the State of Israel in research and study abroad programs
- Local film-lecture series at FAU

The Council of Scientific Society Presidents

International Science Committee Member, 2006 – 2007

- Explored international challenges and opportunities for US science R&D

Caribbean Academy of Sciences

Education Scientific Committee Chairman, 2002-2005

- Curriculum matters related to Caribbean science education reform
- Facilitated planning the Caribbean science education workshop

The American Institute of Chemists, Inc.

International Committee Member, 2002–2003

- Policy development for the Asia Middle-East Chapter of the Institute
- Overseas affairs of the Institute

International Conference Co-Organizer, 2002

- Florida-Israel Institute Conference on 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)