

Brief Biography

Dr. Raj Khosla is a Professor of Precision Agriculture at Colorado State University (CSU). He also shares administrative responsibilities with CSU Office of Engagement and the College of Agricultural Sciences as the Assistant Dean of International Programs. In 2012, Dr. Khosla was named the Jefferson Science Fellow by the National Academy of Sciences and was appointed as the Senior Science Advisor to the U.S. Department of State. In 2011, he earned NASA board membership to the US “*Presidential Advisory Board on Positioning, Navigation and Timing*” to work on the US space based GPS policy. Earlier in 2009, he was named the Colorado State University Distinguished Monfort Professor. In addition, Dr. Khosla is an “Adjunct Scientist/Visiting Professor” at the National Engineering Research Center for Information Technology in Agriculture (NERCITA), in Beijing, China.

At the U.S. Department of State, Dr. Khosla serves as the Senior Science Advisor for Food Security in the Bureau of East Asia Pacific Affairs, Office of Economic Policy (EAP/EP) in Washington D.C.

Dr. Khosla has established a multi-disciplinary, multi-agency, extramurally funded, nationally and internationally recognized, comprehensive research, teaching and extension program in the area of Precision Agriculture. His main focus has been on “Management of in-field soil and crop spatial variability using innovative technologies (such as Global Positioning Systems or GPS, Geographic Information Systems or GIS, and Remote-sensing) for variable rate precision nutrient management. He has generated many discoveries in precision agriculture, most widely recognized among them is the innovative technique of quantifying variability of spatially diverse soils using satellite based remote-sensing to create management zones, which is currently being used by farmers in Colorado, across US and in other countries around the world. He currently has projects in multiple countries and is championing efforts to enhance crop input use efficiency, productivity, profitability, and sustainability of large and small scale agricultural production systems.

Dr. Khosla has co-authored over 300 publications (book chapters, refereed journal articles, extension articles, proceedings, bulletins, reports, popular press articles, digital media, and others). Dr. Khosla has been successful in generating about \$10 million of funding (as a PI and Co PI) from federal, state, private and international agencies. His research, teaching and extension efforts have been recognized widely. He has been invited to several countries around the world. Most recently, he was the opening Keynote speaker in Beijing, China. Previously, he has presented Keynotes in Australia, Argentina, Belgium, Brazil, Canada, China, Czech Republic, Japan, Germany, India, Israel, Korea, Mexico, Malaysia, Saudi Arabia, Spain and the USA. In the coming months he is slated to present additional Keynote addresses at international meetings in Canada, China, India and Indonesia.

Recently, the American Society of Agronomy in their monthly international newsletter reported that “*Dr. Raj Khosla is a recognized authority in the field of Precision Agriculture*”. In the last five years Dr. Khosla has been recognized with over 10 national and international awards. He is the Fellow of American Society of Agronomy; Fellow of Soil Science Society of America; Fellow of Soil and Water Conservation Society and Honorary Life Fellow of International Society of Precision Agriculture.

Dr. Khosla is the Founder and Past-President of the International Society of Precision Agriculture that has membership from 44 countries across the planet. He is the past-president of the Western Society of Soil Science, which includes Western -Canada, -US, and -Mexico, and is also the Past President of the CSU chapter of Gamma Sigma Delta International Honor Society of Agriculture. Dr. Khosla served as an Associate Editor, Soil Science Society of America Journal for six years and is currently on the editorial board of the Int’l Journal of Precision Agriculture.

Raj Khosla
Department of Soil & Crop Sciences
Colorado State University
Ft. Collins, CO 80523-1170
Phone (970) 218-8187; Email: raj.khosla@colostate.edu
Internet: <http://soilcrop.agsci.colostate.edu/faculty-2/rajiv-khosla/>

Education:

2006: LEAD21, Developing Leaders of the 21st century. Fanning Institute of Leadership Development, University of Georgia, Atlanta.
1998 Ph.D. Soil Fertility & Crop Mgmt. Virginia Tech, VA
1995 M.S. Soil Physics Virginia Tech, VA
1992 B.Sc. Agricultural Sciences University of Allahabad, India.

Professional Experience:

10/2013-present: Assistant Dean of International Programs, College of Agri. Sciences, CSU
08/2012-present: Senior Science Advisor for Food Security, US Department of State, Washington D.C.
08/2012-present: Jefferson Science Fellow, National Academy of Sciences, Washington. D.C.
06/2011-present: NASA appointed Board Member, US Presidential Advisory Committee on GPS
07/2010-present: Professor, Precision Agriculture, Colorado State University, CO.
06/2009-present: Visiting Professor, NERCITA, Beijing, China.
03/2010 – 2012: Visiting Professor, Precision Agriculture Research Chair, King Saud University, Riyadh.
06/2009: Colorado State University Distinguished Monfort Professor
07/2005 – 06/2010: Associate Professor, Precision Agriculture, Colorado State University, CO.
09/1999 – 06/2005: Assistant Professor, Precision Agriculture, Colorado State University, CO.
01/1998 – 08/1999: Research Associate, GPS/GIS Cropping Systems Project, Virginia Tech, VA.
08/1993 – 12/1997: Graduate Research Assistant, Crop & Soil Environmental Sciences, VA Tech

Areas of expertise:

At the U.S. Department of State, Dr. Khosla serves as the Senior Science Advisor for Food Security in the Bureau of East Asia Pacific Affairs, Office of Economic Policy (EAP/EP) in Washington D.C. At Colorado State University he is responsible for directing the international programs in the college of Agricultural Sciences, in addition to the Precision Agricultural Research, Extension, and Teaching Program. Dr. Khosla is well known, nationally and internationally, for his pioneering work in quantifying spatial variability in soils by developing site-specific management zones and enhancing nutrient use-efficiency of environmentally sensitive nutrients, particularly nitrogen. He teaches two undergraduate and one graduate level course. In addition, he has developed and is the director of a unique undergraduate program called “*Applied Information Technology in Agriculture*”.

Grants:

Dr. Khosla, as PI and Co. PI, has received about \$10 million in grant funds for research, teaching and extension projects. Funding sources include USDA-NRI, USDA-NASA-IFAFS, SARE, USDA-RME, USDA-NIFA-ISE, NASA, US-EPA, USDA-CSREES-ADEC, USDA-CSREES-IPM, AED, IIE, NRCS, CWRP, DST-GoI, IUSSTF, CSU-AES, CSU-CE, CSU-Provost office, Commodity groups, Private industries, etc.

Total Publications:

(>300)

Refereed Journal Pubs and Book Chapters:	66		
Scientific Manuscripts in Proceedings:	73		
Scientific Conference Abstract:	102	Extension Publications:	42
Intellectual Properties Disclosure:	02	Popular Press Publications:	32

Honors and Awards:

- 2014 Carl Sprenger Research Award, American Society of Agronomy
- 2014 Honorary Lifetime Fellow of International Society of Precision Agriculture
- 2013 Roy E. Blazer Distinguished Lecture, Virginia Tech, Blacksburg, VA
- 2012 Soil Science Applied Research Award, Soil Science Society of America
- 2012 Jefferson Science Fellow, National Academy of Sciences, Washington D.C.
- 2012 Fellow, Soil and Water Conservation Society
- 2012 International Service Award for the Western Region of US, Epsilon Sigma Phi
- 2012 Outstanding Agricultural Scientist Award, AASIO, Cincinnati, OH
- 2011 Fellow, American Society of Agronomy
- 2011 Fellow, Soil Science Society of America
- 2011 International Service Award for the State of Colorado, Epsilon Sigma Phi
- 2011 Appointed by NASA to the “US Presidential Advisory Committee on PNT”
- 2010 Soil Conservation Research Award, Soil & Water Conservation Society, St. Louis, MO
- 2010 “Outstanding Alumni” College of Agricultural Sciences, Virginia Tech, VA.
- 2009 Colorado State University Distinguished Monfort Professorship.
- 2008 Epsilon Sigma Phi Distinguished Visionary Leadership Award for the US Western Reg.
- 2007 Lloyd R. Frederick Soil Science Teaching Travel Award, Soil Science Society of Amer.
- 2007 Visionary Leadership Award for the State of Colorado Epsilon Sigma Phi
- 2006 Award for Innovative Excellence in Teaching Learning and Technology, Jacksonville, FL
- 2006 Distinguished Educator Award of the Year 2005, Rocky Mountain Agribusiness Assoc.
- 2005 Syngenta Crop Protection International Award, American Society of Agronomy, WI
- 2005 State Early Career Extension Service Award, Epsilon Sigma Phi
- 2005 Selected for LEAD21 National Program, Agricultural Leaders of the 21st Century
- 2004 Outstanding Young Scientist Award, AASIO, Seattle, Washington.
- 2004 Award of Excellence, Educational Materials Program, ASA, Seattle, WA.
- 2004 Charles N. Shepardson Teaching Award, College of Agricultural Sciences, CSU.
- 2004 “Faculty Award of Merit” Gamma Sigma Delta National Honor Society for Ag.
- 2004 Certificate of Appreciation, Office of International Programs, Colorado State Univ.
- 2003 Young Scientist Award, Soil Science Society of America, Division S-6.
- 1999 Best Dissertation Award Sigma-Xi Scientific Research Society.
- 1999 Graduate Dissertation Award, Gamma Sigma Delta Honor Society of Agriculture.
- 1998 The Fertilizer Institute Scholarship Award, sponsored by Int’l Fertilizer Dev. Center.
- 1998 Charles I. Rich Graduate Research Fellowship Award, 1998.
- 1998 Recognition of Teaching Excellence, University Writing Program.
- 1998 Outstanding graduate student award by AASIO in Baltimore, MD.
- 1998 Who's Who Among Students in American Univ. & Colleges, Tuscaloosa, AL.
- 1997 J. Fielding Reed Potash and Phosphate Institute Fellowship.
- 1997 First Prize for the Best Paper Award, National Sorghum Conference.
- 1996 P. Howard Massey Food and Nutrition Scholar Award.
- 1996 Graduate Teaching Excellence Award, College of Agri. & Life Sciences.
- 1995 Graduate Travel Fund Award, from Graduate Student Assembly.
- 1995 Graduate Tuition Scholarship, Virginia Tech., 1993 to 1997.
- 1993 J.N. TATA Endowment Scholarship for Higher Studies.

- 1993 Sahu Jain Trust “The Times Group” Scholarship for Higher Studies.
- 1988 S.J. Jindal & Trust Scholarship, for B.S. in Agricultural Sciences, 1988 to 1991.
- 1987 National Meritorious Award from Indian Council of Agricultural Research.

Keynotes, Plenary, Distinguished Lectures, Special Invitations & Honors:

- 2014: Opening “Keynote Speaker” at IIIrd Int’l Geo-AgriInformatics Conference, Beijing, China
- 2014: “Plenary Speaker” at the Global Forum on Innovations in Agriculture, Abu Dhabi
- 2014: “Keynote Speaker” at the 2014 Cropping Systems Conference, Kennewick, WA
- 2014: “Keynote Speaker” at the Independent Crop Consultant Association, Minneapolis, MN
- 2013: Roy Blazer Distinguished Lecture, Virginia Tech, Blacksburg, VA
- 2013: “Opening Speaker” at the Roundtable Discussion, European Conference on Precision Agriculture, Lleida, Spain
- 2013: “Plenary Speaker” at the Feeding Cities: Food Security Conference, Rockefeller Foundation and University of Pennsylvania, Philadelphia
- 2013: “Keynote Speaker” at the Eastern Canada Soil and Water Conservation Meetings, Grand Falls, NB, Canada
- 2013: “Keynote Speaker” at the Precision Agriculture Summit, Jamestown, North Dakota
- 2013: “Keynote Speaker” at the Precision Agriculture Update Conference, Calgary, Canada
- 2013: “Keynote Speaker” at the Soil & Crop Improvement Association Annual Meeting, Fredericton, New Brunswick, Canada,
- 2012: “Keynote Speaker” at the 2012 Brazilian Conference on Precision Agriculture
- 2012 “Plenary Speaker” at the 5th World Congress of Agrologist and Agronomists, Quebec City, Quebec, Canada
- 2012 “Plenary Speaker” at the 2012 Agriculture Congress, Putrajaya, Malaysia
- 2012: “Keynote Speaker” at the Third national Conference on Agro-Informatics and Precision Agriculture, Hyderabad, India
- 2012 “Keynote Speaker” at the Katholieke University of Leuven, Belgium
- 2012 “Keynote Speaker” 12th Int’l Symposium on Management of Potassium in Plant and Soil Systems in China, Chengdu, China
- 2012 “Opening Keynote Speaker” at Precision Agriculture 2.0 Conference, Calgary
- 2012 “Keynote Speaker” at the Saskatchewan Soils and Crops Workshop, Saskatoon
- 2012 “Keynote Speaker” at the World Grain Summit, Regina, Canada
- 2011 “Keynote Speaker” at the Advanced Crop Advisory Conference, Regina, Canada
- 2011 “Keynote Speaker” at the 6th ISIITA Conference, Beijing, China
- 2011 “Keynote Speaker” at the 4th Asian Conference on Precision Agriculture in Sapporo, Japan.
- 2011 “Invited Speaker” at the IInd International Symposium on Plant Phenotyping, Germany
- 2011 “Plenary Speaker” at the 7th European Conference on Precision Agriculture, Prague
- 2011 “Opening Keynote Speaker” at the Int’l Agri-Sensing Conference in Haifa, Israel, Feb 2011
- 2011 “Keynote Speaker” at the Agri-Tech Canada and Crop Show, in Saskatoon, Canada.
- 2011 “Keynote Speaker” at the first Bilateral Workshop on Precision Agriculture techniques and Technologies, in Ludhiana, Punjab, India.

- 2010 “Keynote Speaker” at Symposium on Precision Nutrient Management at the World Congress on Soil Science, Australia, August 2010.
- 2010 “Keynote Speaker” at the Great Plains Soil Fertility Conference, Denver, CO, Mar 1st.
- 2010 “Keynote Speaker” at the University of Minnesota, Agro-ecology Centennial Celebration Symposium entitled “Agriculture in the 21st Century”.
- 2010 Invited speaker at the Ag Forum Seminar, Monsanto Inc., St. Louis, MO. Feb 3rd.
- 2010 Invited speaker at the Southern Rocky Mountain Agricultural Conference, Feb 11th.
- 2010 Invited speaker at the Rocky Mountain Agribusiness Association Meetings, Denver, Jan 12th.
- 2010 “Keynote speaker” at the Nebraska Agricultural Technology Association Annual Meeting.
- 2009 “Keynote Speaker” at the International Conference on Food Security and Environmental Sustainability, IIT-Kharagpur, India, Dec 2009.
- 2009 “Keynote Speaker” at the 3rd Asian Conference on Precision Agriculture, Beijing, China, Oct., 2009.
- 2009 Invited Speaker at the Information Agriculture Conference in Springfield, IL July 2009.
- 2009 “Keynote Speaker” at the Technology in Agriculture Conference in Queretaro, Mexico, Feb.
- 2009 Invited speaker at the Western Nutrient Management Conference in Salt Lake City, UT.
- 2009 Invited speaker at the Advanced Crop Advisory Conference in Fargo, ND.
- 2008 “Keynote Speaker” for Agri-Tech Canada, by the Trade Commissioner of Canada, in Saskatoon, Saskatchewan, Canada
- 2008 Invited by the Center for Science, Mathematics and Technology Education (CSMATE) for “Science on the Cutting Edge” seminar series for K-12 teachers.
- 2007 Invited by USDA to serve on a Curriculum Development and Capacity Building Panel for the US-India Agriculture Knowledge Initiative signed by President Bush, in Delhi, India.
- 2006 Invited Speaker to Symposium on Impact of Innovative Technologies in Precision Agriculture Nutrient Management at the ASA meetings
- 2006 Invited to serve on the USDA-ARS Scientific Quality Review Panel, Beltsville, MD.
- 2006 Invited “Live-Lecture” over Internet 2 from Colorado State University to Technologico de Monterrey University, Monterrey, Mexico
- 2005 Invited Speaker to XIII International Conference NOGATEC, Torreon, Mexico
- 2005 Invited Speaker to IX International Symposium of Soil and Plant Analysis, Mexico.
- 2005 Invited “Live-Lecture” over Internet 2 from Colorado State University to Technologico de Monterrey University, Monterrey, Mexico
- 2004 Invited lecture at the Technologico de Monterrey University, Monterrey, Mexico
- 2004 Invited Speaker, A to Z session for practitioners at the 7th Int’l Conf. on Prec. Ag, MN.
- 2003 Invited Speaker to National Remote Sensing Agency, Hyderabad, India.
- 2003 Invited Speaker to ICAR Cropping Systems Research Institute, Meerut, India
- 2003 Invited Speaker to Information Agriculture Conference, Indianapolis, IN
- 2002 Invited Speaker to the 10th International No-Till Conference, Argentina.
- 2002 Invited Speaker to John C. Stennis NASA Space Center, Mississippi.
- 2001 Invited by USDA-NASA to serve on a Joint National panel in Washington D.C.
- 2001 Invited Speaker to Information Agriculture Conference, Indianapolis, IN

In the last 5 years, Dr. Khosla has delivered over 200 research and extension related presentations (mostly invited) at local, regional, national and international meetings, conferences, workshops, field-days, and focus group meetings.

Professional Membership:

Member: American Society of Agronomy
Member: Soil Science Society of America
Member: Crop Science Society of America
Member: International Society of Precision Agriculture
Member: American Association for Advancement of Science
Member: Sigma-Xi, The Scientific Research Society
Member: Soil and Water Conservation Society
Member: Gamma Sigma Delta
Member: Epsilon Sigma Phi

Service and Leadership:

President: International Society of Precision Agriculture 2010-2012
President: Western Soil Science Society of America 2008-2009
President: Association of Agricultural Scientists of Indian Origin 2006-2008
President: Gamma Sigma Delta, National Honor Society of Agriculture, CSU Chapter 05-06
Chairperson: 9th, 10th, and the 11th Int'l Conference on Precision Agriculture 2008, 2010, 2012
Associate Editor: Soil Science Society of America Journal, Jan. 2004 – Jan. 2010
Editorial Board: International Journal of Precision Agriculture

Symposium Co-Chair: Locally-based adaptive management: impacts and challenges for feeding the world. American Society of Agronomy meetings, San Antonio, TX Oct 2011.
Symposium Chair: Soil Sampling, testing, and Analysis in the 21st century, Div S-8, Soil Science Society of America meetings in Pittsburgh, Nov., 2009.
Symposium Co-Chair: Getting the word out: New models of community engagement for developing and extending agricultural knowledge, ASA meetings, Houston, TX, 2008.
Symposium Chair: “*Precision Monitoring of Agricultural and Forest Systems*” at the Int'l conference of Monitoring of Science and Technology, Denver, CO. 2004.
National Chair: For Geo-spatial theme at the Annual meetings of Soil & Water Conservation Society, St. Paul. MN. 2004.
Representative: North Central Region-180 committee on Precision Agriculture. 2000-present.
Representative: W-1009 Western Region Committee on Sensors and Automation. 2009-present
Chair: Several Symposiums at the Annual Meetings of American Society of Agronomy
Chair: The 13th Annual Research Symposium of Virginia Tech, 1997
Vice President: Graduate Student Council of Virginia Tech. 1997-97
Moderator: Several sessions at the Int'l conference of ASA and SSSA 1998 onwards
Reviewer: Review numerous manuscripts per year for International scientific journals

Committee member: Currently serving on 7 National/University/College/Departmental committees

- Member: ASA Agronomic Service Awards Committee 2009-2011
- Member: ASA Award Committee: A445 Kingenta Agri Science Award
- NCERA-180: National Precision Ag Committee
- W-1009: Regional Committee on Sensors and Automation
- RI Panel: Department of Soil & Crop Sciences
- CE Panel: Department of Soil & Crop Sciences
- Dept Comm.: Centennial Celebrations committee, Soil & Crop Sciences

Search Committees: Served on several search committees for hiring faculty and Extension Agents.