

Dear Search Committee,

I am very excited to share my interest in the Northwestern State University (NSU) President position. I am particularly excited about NSU's mission to become the nation's premier regional institution through innovative delivery of transformative Student learning experiences. With a doctorate from Imperial College London, I have built a distinguished professional career and an outstanding administrative leadership record in higher education. Over the past 30 years, I have provided inspiring, visionary and transformative leadership to advance excellence and innovation in teaching, research, community engagement, student success, resource generation, and service. I have inspired diverse constituents to establish forward thinking academic units and degree programs, innovative student-centered educational, research and professional development programs, interdisciplinary research, education and outreach centers, and impactful community engagement initiatives at The Ohio State University (OSU), the University of Tennessee at Knoxville (UTK) and the University of Texas Rio Grande Valley (UTRGV). I have also led institutional transformation projects on enrollment growth, high impact student engagement and professional development programs, research expansion, and faculty and staff success. I am a staunch proponent of community engagement, have significant experience in working with and serving on advisory boards, and have passion for and experience in fundraising. I also possess genuine interpersonal skills honed through experience in academia, government and industry that enable me to work effectively with diverse stakeholders. Having been recognized as an "inspiring, visionary, and transformative leader", an "innovator", a "strategic thinker", and a "builder" by my peers and mentors, I believe I can provide the right leadership at NSU. *Below is a summary of my relevant experiences in the context of the position description and the recorded Initial Search Committee's Public Meeting.*

1. Envisioning the future

Building on NSU's long history of transforming student lives and 2016-2021 Strategic Plan, we will create a shared vision that will expand the University's resource base, academic excellence, community engagement, economic impact, and visibility. At every institution, I have used a simple but systematic *asset mapping* approach to learn about the passions, aspirations and challenges of faculty, staff, students and community leaders using individual meetings, open forums, and listening sessions within first 100 days in office. This process has allowed me to create an initial set of priorities to focus on while simultaneously developing formal strategic plans using broad and inclusive processes. I have also led strategic planning efforts at department, college, division and university levels, and believe that a shared and strategic vision enhances morale, builds positive energy and creates collaborations. Below are two examples of my approaches to developing shared visions and associated accomplishments.

As Founding Dean of the College of Sciences at UTRGV, I started when UTRGV had just merged the three long-standing legacy institutions and opened the doors to students. I began by meeting *all* 175 faculty in the college *individually* to gauge their passions and strengths. I also conducted open forums with faculty, staff and students to gain insights into the opportunities and challenges facing the new university. Based on this *asset mapping* we developed a shared vision and a strategic plan that resulted in a major transformation of the College, producing tremendous growth including a new school, 2 new BS degrees, 4 new MS degrees, and 4 new Ph.D. planning authorities, 3 new research, education and outreach centers, a new HIGH Scholars program to engage high school and undergraduate students in research, and increases in undergraduate (20%) and graduate (26%) enrollment in three years. We also set and accomplished our College goal of engaging 100% of our undergraduate majors in research and built the nation's largest UTeach program that prepares STEM majors as K-12 teachers through project-based learning and in-school teaching experiences under the mentorship of Master Teachers.

When I started as EVP, UTRGV had a declining graduate enrollment for the previous three years, stagnant research expenditures, ineffective IRB with a substantial backlog, and lack of clear workload, base salary, intellectual property, and export control policies. I began by meeting key Division staff individually and holding listening sessions with deans, and department chairs by college. Based on this asset mapping, we developed a shared vision and a strategic plan for the Division and started working collaboratively with other EVPs, VPs, college deans, department chairs, faculty, students and community leaders. Within three years we have increased our graduate enrollment by 82% from 3,074 to 5,608, accelerated online programs enrollment by 235% from 618 to 2,072, total research

expenditures by 105% from \$26.0M to \$53.7M, and have added 25 new degree and certificate programs in traditional and online formats, trained over 85% of our 1,468 faculty in online teaching with over 900 Quality Matters certified, expanded professional development opportunities for students, staff, faculty and working professionals in the region, and established innovative community partnerships locally and globally.

2. Building a sustainable financial model based on optimized enrollment and academic excellence

U.S. higher education is at a critical juncture because of the decreasing birth rates which signal a reduction in enrollment of as much as 20% within the next five years. Tuition dependent colleges and universities are already facing serious financial challenges due to declining enrollments, a trend that has been exacerbated by the COVID 19 pandemic. This crisis calls for *a new model of financial stability for higher education institutions*. These institutions must develop innovative enrollment management strategies to become more effective at recruiting, retaining and graduating students of *all* backgrounds, diversify revenue streams, and become nimble in addressing rapidly changing workforce needs. I have led these types of initiatives to enhance UTRGV's financial sustainability.

The development of a *sustainable enrollment growth strategy* requires strategic emphasis on recruitment, access, retention, and graduation of students of *all* backgrounds. It also requires state-of-the-art Contact Center, Customer Relations Management (CRM), and digital marketing platforms, attractive program mix and delivery modes, and pedagogies appropriate for Generation Z and non-traditional students. I have used a variety of innovative and entrepreneurial approaches to drive enrollment at UTK and UTRGV. At UTK, we developed a shared-funding model that doubled graduate enrollment within two years in my department. At UTRGV, we increased undergraduate enrollment by 20% and graduate enrollment by 26% in my college by building new programs and innovative recruitment and retention strategies that included engagement of high school and undergraduate students in research with faculty and new shared-funding models to recruit high quality graduate students.

As mentioned above, when I started as EVP, UTRGV's enrollment had been declining for the previous three years and it had just lost \$21 million in Formula Funding from the Texas Legislature in addition to the ~\$60M in lost tuition revenue for the biennium. I led a university-wide effort to establish a *sustainable enrollment growth strategy* that has resulted in 82% increase in total graduate enrollment (from 3,074 to 5,608) and 235% increase in accelerated online programs enrollment (from 618 to 2,072) in three-years. This enrollment increase has produced \$23 million increase in Formula Funding for the FY21-23 biennium, which formed the basis for awarding merit and market and equity adjustments for all UTRGV employees this year.

Attractive program mix is key to building enrollment and I have provided strong leadership in the development of new and forward-thinking programs focused on the grand global challenges, local economy, and current and emerging market needs. As the Founding Dean of the College of Sciences, I led the development of interdisciplinary undergraduate programs in Applied Statistics and Data Science and Sustainable Agriculture and Food Systems and master's programs in Agricultural, Environmental, and Sustainability Sciences, Applied Statistics and Data Science, Biochemistry and Molecular Biology, and Ocean, Coastal, and Earth Sciences. These programs along with carefully crafted recruitment strategies have increased the college undergraduate enrollment by 45% and graduate enrollment by 94% in 5 years. As EVP responsible for new program development, I have provided university-wide leadership for the development of new undergraduate programs in Cybersecurity and Music and Business Entrepreneurship and Master's programs in Business Analytics, Computational Biology and Bioinformatics, Computer Engineering, Global Commerce, Healthcare Informatics, Art Education, Graphic Design, and UXUI Design.

Due to the need for rapidly upskilling and reskilling the workforce, demand for *online programs* has increased. I am excited to see NSU's leadership and commitment to offering fully online degree programs. Accelerated online programs have become very popular as these provide fast-paced access to applied and professional degree and certificate programs that are in high demand. At UTRGV, enrollment in accelerated online programs has grown over 340% since 2015. Also enrollment in accelerated online *Professional programs* is on the rise. For example, enrollment in our accelerated online Health Science Master's program has grown over 360% in the past 5 years and in Masters in Social Work by 350% in just the past two years. That is why we added new programs in Business Analytics, Global Commerce, Graphic Design, and UXUI only in the online format. COVID 19 pandemic has provided further impetus for the development of online programs and we have trained and Quality Matters certified over 85% of our 1485 faculty through our Center for Online Learning and Teaching Technology that I oversee.

3. Fundraising and building other revenue streams

Fostering a culture of *philanthropy and fundraising* would be one of my top priorities. I discovered my passion for fundraising early when I was elected President of the Speech and Debate Parents' Association at Wooster High School in Wooster, Ohio where I established the school's first-ever \$150,000 endowment. This required passionate articulation of the impacts of the Speech and Debate Program on students and inspiring alumni, community leaders, local foundations, and parents of current and past students to donate for the proposed endowment. Within two years, we exceeded our goal! Since then I have been actively involved in successful fundraising efforts. At UTK we established two new industry supported endowments totaling over \$200,000. As the Founding Dean of the College of Sciences at UTRGV, I worked with my Development Officer to establish an Advisory Board and we successfully established several new endowments and funds totaling over \$1,000,000 including an Endowed Professorship at \$600,000. As a member of the Friends of Quinta Mazatlán Board, I am currently engaged in a \$35 M capital campaign to build the first Platinum LEED Certified building in South Texas for the new Center for Urban Ecology at Quinta Mazatlán, a UTRGV and City of McAllen joint initiative. Last year, I collaborated with our Vice President for Advancement in garnering a \$38 M medical research grant from the Valley Baptist Foundation and a \$100,000 fund from HEB Foundation for the newly established Sustainable Agriculture and Food Systems program. I am currently working on a 50 acre land and \$1 M cash donation for our Center for Sustainable Agriculture and Rural Advancement.

To increase competitive *grant funding*, we restructured our Office of Research Administration to increase pre- and post-award support for faculty and staff, established a new faculty development program focused on building research and grant writing skills, and established a Faculty Grant Award Incentive program to reward successful faculty. Our efforts have increased UTRGV's research expenditures by 105% from \$26M to \$53.7M in three years. I also established the Office of Professional Education and Workforce Development (PEWD) and created an external Advisory Board to directly focus on executive and continuing education for the emerging healthcare, IT and financial services industries in the region, contributing directly to workforce and economic development and doubling our revenue from these programs in less than three years.

4. Enhancing NSU's impact on local and regional economic development

I believe higher education is a social good that can transform lives and communities through the power of discovery, learning, and creative expression. U.S. Public universities play a major role in providing access to quality education, contribute significantly to the regional and national economies, and advance the health, environmental and cultural vitality of cities, states and regions. With society facing *grand global challenges* including climate change, water shortages, pollution, poverty, food insecurity, childhood obesity, and health threats universities must provide leadership to inspire and prepare global leaders and professionals to address these challenges. Faculty and students must work across disciplines to discover and deliver innovative solutions to the challenges and engage with local and global communities to foster a resilient and sustainable future. I have used this vision throughout my career in building powerful inter-departmental/inter-college collaborations and university-community partnerships to reinvent academic programs for directly addressing major local and global challenges while enhancing academic excellence, faculty, staff and student success, and community resilience.

I am very excited about NSU's profound impact on social mobility of many first generation students. As a staunch proponent of community engagement with experience at land-grant institutions, I believe that mutually-beneficial university-community partnerships can lead to fruitful scholarship for faculty, learning opportunities for students, financial and political support for the university, and positive impacts on the communities. Throughout my career, I have engaged with local governments, businesses and communities to create innovative solutions to problems and build local economy and community resilience. My engagement with Cleveland and Columbus city governments and community partners in Ohio to repurpose vacant lots and enhance access to fresh produce in primarily underserved black neighborhoods, resulted in impactful community-engaged scholarship as well as economic and social benefits for the partnering communities. That is why at UTRGV, I led a university-wide initiative to establish the *Community-Engaged Scholarship and Learning (CESL)* program that uses culturally-relevant pedagogy to engage undergraduate Hispanic students in experiential learning, community-engaged research, and reflective writing under the mentorship of passionate faculty. Students and faculty engaged in the CESL courses have worked directly with city government officials to address water quality and vector-borne disease issues, with farmers to address water, pest and nutrient management problems in agriculture, with school teachers to enhance student learning,

and have taught English to migrant workers and their families, while gaining professional and leadership skills including self-awareness, interpersonal communication and empathy for cultural differences.

To increase high school students' interest and success in STEM fields, I established the HIGH Scholars program for Latinx students from the Rio Grande Valley at UTRGV and the OARDC Research Internship Program for first generation students from rural Ohio at OSU. Both programs engage 50-75 rising high school juniors and seniors in original research projects in biological, physical, and social sciences and engineering during the summers. Each student, mentored individually by a faculty member designs an independent research project, writes a proposal, conducts the research, analyzes the data, writes a scientific paper, and makes an oral presentation. All students come together for a weekly Lunch & Learn session in which topics such as philosophy of science, ethics, proposal development, experimental design and statistical analysis, and scientific communication are discussed. These programs have been highly impactful and many students have co-authored publications in peer-reviewed journals!

Although, UTRGV is not a land-grant institution and, prior to my appointment, it did not have an agriculture program despite the fact that Rio Grande Valley is one of the leading agricultural areas in the country. Local farmers expressed a serious need for the university to help them with problems in transitioning their conventional farms to organic agriculture as well as the local workforce trained in agricultural sciences. To meet these needs of the local farming community, I worked with faculty in the Biology department to establish a new interdisciplinary Master's program in Agricultural, Environmental, and Sustainability Sciences which attracted over 30 students during its first year. We then worked with faculty across the university to develop an interdisciplinary Bachelor's program in Sustainable Agriculture and Food Systems. To more deeply engage with farmers and rural communities, we established a new Center for Sustainable Agriculture and Rural Advancement (SARA) that engages faculty and students from the newly established agricultural degree programs in on-farm research to develop practical solutions to agricultural problems in South Texas. In another effort, we engaged with local public health officials to address mosquito-borne diseases on the US-Mexico border, and established the Center for Vector Borne Diseases that now conducts research and provides disease surveillance and testing services for all four counties in the area.

I am currently leading a major partnership with the City of McAllen to establish a joint Center for Urban Ecology to foster sustainable development in the rapidly urbanizing Rio Grande Valley. This partnership won a \$5.0M planning grant from the Texas State Legislature and is now engaged in a \$35 M capital campaign to build the first Platinum LEED Certified building in South Texas for the center. In another effort, we engaged with local public health officials to address mosquito-borne diseases on the US-Mexico border, and established the Center for Vector Borne Diseases that now conducts research and provides disease surveillance and testing services for all three counties in the area. I am also serving on the McAllen Economic Development Corporation (MEDC) Board and chair its Workforce Education Committee. I have leveraged this position to establish the UTRGV's Office of Professional Education and Workforce Development and have created an Advisory Board for it to develop professional development opportunities for students and build transformative economic development initiatives for the city. I lead UTRGV's Office of Global Engagement and have established a series of innovative partnerships with high quality universities and colleges in Columbia, Ghana, India, and Mexico. I have also participated in several K-12 partnerships and transfer agreements with community colleges as Dean of the College of Sciences. All these efforts have contributed to UTRGV's first Carnegie Community Engagement designation received on January 31, 2020.

Having worked at OSU (the Buckeyes), UTK (the Volunteers) and UTRGV (the Vaqueros), I have gained special appreciation for the value of intercollegiate athletics programs in building student and community attachment to the university and mobilizing alumni for enhanced philanthropy. At UTRGV, I participate in the Annual Dean's Challenge to mobilize the college to support the athletics program. As Dean of the College of Sciences and also as Dean of the Graduate College at UTRGV, I worked closely with the Athletics Director to enhance academic success of student athletes. I have also annually provided scholarships to students on our Chess team that has won three back to back national championships. As an avid runner myself (5 and 10 K, mostly for charity runs), I understand the discipline and dedication of athletes, and the pride athletics brings to the University.

5. Enhance student success

Being a first-generation college student from a rural area myself, enhancing *access* to quality education and *student success* are my top personal goals and they draw me to institutions that serve first-generation, low income, disadvantaged, and minority students. Hailing from a background with extreme poverty, I would never have

imagined that I could make this far. Availability of a merit scholarship and fixed and low tuition at a public research university enabled me to complete my 5-year undergraduate program in four years as I was able to carry extra credits each semester. Even after earning a doctorate from Imperial College London and having a distinguished academic and professional career, I remember the struggle of my early days, which drives me at every opportunity to improve student access to quality education which, as in my case, can transform the lives of students and their families. That is exactly why I moved to UTRGV, which serves largely first-generation Latinx students. NSU provides a perfect opportunity to further my passion of enhancing access to quality education to all students irrespective of their economic condition, gender, race, ethnicity, sexual orientation, or lived experiences.

As with faculty and staff, I greatly value engaging with students. As Department Head at UTK, I reinvigorated the Student Association and served as its faculty mentor. We also included student representatives on major departmental committees. As Founding Dean of the College of Sciences at UTRGV, I regularly conducted Open Forums with students to seek input and receive feedback. I also supported student organizations with travel support and other guidance. As Dean of the Graduate College at UTRGV, I regularly conducted Open Forums and Online Surveys to obtain student feedback and seek input on policies and programs. I have invited Student Government Association to have a regular Open House with the Graduate College. To enhance online student experience and to better engage them with UTRGV services and fellow students, we helped students establish the UTRGV Online Students' Association. This association has a dedicated website with state-of-the-art social platform for students to exchange ideas, report issues, host meetings and seminars, and develop their professional skills by running the association and organizing seminars, and community service activities, etc.

Integrated curricular and non-curricular experiences that focus on creativity, innovation, entrepreneurship, and experiential learning are essential for enhancing student success. I strongly believe in experiential learning and taught all my courses at OSU and UTK by embedding team research projects as the central component. As Founding Dean of the College of Sciences at UTRGV, I worked with all department chairs to set our College goal of engaging 100% of our undergraduate majors in at least one significant research experience. We accomplished this goal by establishing required research-intensive capstone courses in all undergraduate programs. In our new degree programs, we included professional development experiences such as research, scientific communication, and internships with industry, government, and community organizations to add value to students' academic experience. We also built the nation's largest UTeach program that prepares STEM majors as K-12 teachers through project-based learning and in-school teaching experiences under the mentorship of Master Teachers. Such high impact programs not only increase retention, they also serve as recruitment tools to sustain and grow enrollment.

Based on my engagement with communities in Ohio and Texas, I have discovered that engaging faculty and students with community partners where goal is to co-discover and co-develop solutions to local problems can have a profound effect on student learning and career readiness, and in helping them find their purpose to contribute to the society. That is why at UTRGV, I led the development of the *Community-Engaged Scholarship and Learning (CESL)* to facilitate early engagement that anchors a student's college experience into a long lasting affinity and affiliation to the university and community. Through transformative professional development of passionate faculty across the university, and cross-institutional linkages within and beyond the university, CESL builds *peer learning communities* that facilitate close mentorship, strong student support, and community engagement, factors that are positively correlated with student competence. *The CESL approach presents a new model of transformative education that enhances student attachment to the community and the university, leading to increased student retention, graduation, and career readiness.* This program is now supported by a \$1.5M NSF grant.

To enhance Latinx undergraduate *student success* in introductory and gateway courses in STEM disciplines, we have developed a novel Family-Centered Theory of Change Model. The transformative model creates culturally relevant learning opportunities for students, families from the community, and selected Spanish-speaking faculty to engage in *pláticas* (dialogues) as equal producers of knowledge. Introductory and gateway courses in mathematics, chemistry and physics are now being revised to include a Family-Centered class project that is culturally relevant and addresses diversity, equity, and inclusion in STEM disciplines paving the way for higher student learning, persistence and degree attainment. We have also revised the existing CESL 1101 seminar course into an introductory Mexican American Studies for STEM students as they make their transition from high school to college. Utilizing curricula, pedagogies and learning frameworks that are typically used in Mexican American Studies, the revised CESL 1101 course addresses diversity, equity, and inclusion through a multidimensional

intersectionalities framework for multiple social identities, domains of power, and historicity. This project has just been funded by the NSF's Improving Undergraduate Stem Education (IUSE) program at \$3.0M!

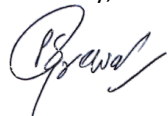
Research demonstrates that *on-campus employment* increases *student retention and graduation rates*. Therefore, expanding on-campus student employment opportunities is a major initiative of our Office of Professional Education and Workforce Development (PEWD) that I established. PEWD builds partnerships and contractual work agreements with for- and non-profits to deliver their work such as managing call/contact centers, digital marketing, electronic database management, electronic reminders, website development and management, and other activities in a more cost effective manner, while providing real-world paid work experiences for students. PEWD has recently established a university-wide LinkedIn Learning program that provides free access to over 16,000 short courses and videos for personal and professional development of students, staff and faculty. We are currently training our faculty to incorporate specific LinkedIn Learning modules into their courses to engage students and connect with alumni.

In addition to academics, students also have non-academic needs that affect their *retention*. As EVP, I established the UTRGV Sustainability Fellows program to engage faculty and students in impactful sustainability and community resilience projects on campus and in the local community. In one project, students conducted a systematic survey to assess the extent of hunger on campus. Of the 3,000 students who responded, 44.5% said they experienced food insecurity during the last week. Working closely with the students, we established a *Campus Food Security Initiative* to eliminate hunger and to bring the necessary attitudinal and behavioral changes towards plant-based diet to address diabetes and obesity crisis in the region. This project employs and trains students in building sustainable food systems from production and locally sourcing healthy foods to preparation of appetizing dishes from plant products and serving them using a *pay-as-you-feel* model to avoid stigma associated with hunger. During COVID 19 pandemic, the program served 150 to 170 students, staff, faculty, and community members weekly on both UTRGV campuses. While this initiative builds students' leadership skills and intercultural competence, it also helped us retain students by addressing a critical non-academic need, food insecurity, during the COVID-19 pandemic.

Due to the demographic shifts, more students of color and those from economically challenging backgrounds and under-resourced schools are seeking higher education opportunities, but have traditionally been less successful. As faculty and staff serve as role models, I have provided leadership to recruit diverse and outstanding faculty and staff by ensuring the search committees are diverse and are trained in bias recognition. I ensured that all positions are advertised broadly including targeted recruitment through professional associations serving minorities. I also provided leadership in building spousal hire and attractive start-up packages to recruit diverse faculty. To enhance access and recruit outstanding students from diverse backgrounds, I have established a variety of competitive scholarships, fellowships and assistantships, streamlined recruitment and admission processes, made financial aid information more accessible, and built diverse admission committees with tremendous success. To foster inclusion, I have used simple and non-intrusive approaches including departmental potlucks, picnics, and game nights. I also led ethnic fairs within and outside the university to foster cultural and global understanding and inclusion. At UTRGV, I facilitated the establishment of the Collaborative Online International Learning (COIL) program that prepares faculty to partner with their counterparts in other countries to engage students in global education.

In closing, I am very excited about this unique opportunity that matches perfectly with my background, experiences, and career goals. Together, we will drive NSU's academic excellence, increase student success and community engagement, and raise its regional and national eminence. Attached is my *Curriculum Vitae* and a list of references. I look forward to meeting you all and learning about the many exciting things you are doing at NSU!

Sincerely,



Parwinder S. Grewal, Ph.D., DIC

Parwinder S. Grewal

A. Professional Positions Held

2018 -	Executive Vice President for Research, Graduate Studies and New Program Development, University of Texas Rio Grande Valley, Texas
2015 - 2018	Founding Dean, College of Sciences, University of Texas Rio Grande Valley, Texas
2013 - 2015	Department Head & Professor, Entomology and Plant Pathology, University of Tennessee, Knoxville, Tennessee
2008 - 2013	Founder and Director, OARDC Research Internships Program, The Ohio State University, Wooster, Ohio
2006 - 2013	Professor of Entomology (with courtesy appointments in Plant Pathology and Environmental Science Graduate Program), The Ohio State University, Wooster, Ohio
2004 - 2013	Founder and Director, Center for Urban Environment and Economic Development, The Ohio State University, Wooster, Ohio
2003 - 2013	Founder and Director, Urban Landscape Ecology Program, OARDC, The Ohio State University, Wooster, Ohio
2002 - 2005	Associate Professor of Entomology (with courtesy appointments in Plant Pathology and Environmental Science Graduate Program), The Ohio State University, Wooster, Ohio
1997 - 2001	Assistant Professor of Entomology (with courtesy appointments in Plant Pathology and Environment Science Graduate Program), The Ohio State University, Wooster, Ohio
1995 - 1997	Research Group Leader, Biosys, Inc., Columbia, Maryland
1993 - 1995	Senior Scientist and Research Manager, Biosys, Inc., Palo Alto, California
1991 - 1993	Post-doctoral Research Associate, Entomology, Rutgers University, New Jersey
1990 - 1991	Higher Scientific Officer, Entomology, HRI, Littlehampton, England
1989 - 1990	Scientific Officer, Entomology, HRI, Littlehampton, England
1984 - 1987	Scientist, Entomology and Nematology, NCMRT, ARS, Solan, India

B. Awards and Recognitions

2013	Fulbright Scholar Award, US Department of State and Stockholm University, Sweden.
2011	University Distinguished Scholar Award, The Ohio State University, Columbus, Ohio.
2011	OARDC Innovator of the Year Award, The Ohio State University, Wooster, Ohio.
2009	Fellow of the Society of Nematologists, USA.
2009	OARDC Distinguished Senior Faculty Award, The Ohio State University, Wooster, Ohio.
2008	Recognition Award in Urban Entomology, Entomological Society of America, USA.
2003	Award for Excellence in Integrated Pest Management, Entomological Society of America, USA.
2002	Syngenta Crop Protection Award, Society of Nematologists, USA.
2002	OARDC Distinguished Junior Faculty Award, The Ohio State University.
2000	Educational Project Award by the Board Certified Entomologists of Mid-America for the Website on Insect-parasitic nematodes.
2000	Educational Project Award by the Board Certified Entomologists of Mid-America for the Video on insect-parasitic nematodes.
1999	Lindbergh Award for Environmental Achievement.
1999	OARDC Departmental Research Award for Innovation.
1991	Young Scientist of the Year-1991 Award by the UK Mushroom Growers Association.

- 1987 Doctoral Fellowship Award by the Royal Commission of London.
- 1983 University Gold Medal for All-round Best M.S. Agricultural Sciences Student.
- 1981 First Place in the All-India ICAR Junior Research Merit Scholarship Examination in Nematology.

C. Education

- 1990 Ph.D. Zoology, Imperial College London, United Kingdom
- 1983 MS Plant Pathology (Thesis: Nematology), Punjab Agricultural University, Ludhiana, Punjab, India
- 1981 BS Agriculture (Hons: Plant Protection), Punjab Agricultural University, Ludhiana, Punjab, India

D. Administrative Experience and Major Accomplishments

2018 - Executive Vice President - Research, Graduate Studies and New Program Development, UTRGV

- In this *EVP/shared-provost* role (UTRGV eliminated Provost position in 2018), I provide administrative leadership to the Office of Research, Innovation & Technology Commercialization, Graduate College, Office of New Program Development, Office of Professional Education & Workforce Development, Office of Global Engagement, Office of Sustainability, University Libraries, Center for Online Learning and Teaching Technology, and 7 Centers of Excellence with over 208 FTEs and over \$30M in personnel budget; Founded in 2013, UTRGV is a complex, multi-campus, metropolitan university that has brought together the assets of three legacy institutions, UT Brownsville, UT Pan American, and the UT Regional Academic Health Science Center in Harlingen, opened a new medical school in 2016, and now has facilities located in 9 cities, serves over 32,600 students with over 1,468 faculty, 1,100 staff; and has the Carnegie Doctoral University– High Research Activity (R2) and Community Engagement designations
- Met over 40% of the key Division staff individually, held listening sessions with deans and department chairs by college within first 100 days and then developed a Strategic Plan for the Division
- Hired several members of the leadership team including two new Associate Vice Presidents, an Assistant Vice President, two Associate Deans for the Graduate College, three Executive Directors, four Directors, three Associate Directors, and a Communications Coordinator for the Division
- Reorganized the Research, Innovation and Technology Commercialization unit to enhance customer service and increase efficiency for handling proposal submissions, funded grants and contracts, and IRB
- Developed and implemented a *novel* Faculty Grant Award Incentive program that provides 0.5% of the actual grant award as a permanent base salary increase to successful faculty to incentivize grant funding
- Established a comprehensive faculty development program - Keys to Research – that provides nine 3-h workshops to enhance faculty research grantsmanship skills to increase competitive grant funding
- Collaborated with other EVPs to implement, at the university level, a compassionate Faculty Workload Policy that we first developed for the College of Sciences
- Help increase UTRGV's total research expenditure by 105% from \$26.0M to \$53.7M within three years
- Led the establishment of new institutional base salary, intellectual property, and export control policies
- Served also as the Dean of the Graduate College from May 2018 to May 2021
- Reorganized the Graduate College to improve recruitment processes and increase operational efficiencies; created a separate unit to more efficiently manage online programs and to capture the emerging market; and obtained \$375,000 from UT System for need-based retention scholarships for online students
- Streamlined graduate admission processes including (i) moving from annual admission cycle to rolling admission cycle by which students could be admitted in any semester; (ii) eliminating application fees for all but professional programs; and (iii) bringing foreign transcript evaluations in-house. Also established a \$1,000 Dean's Enrollment Incentive Scholarship for all unconditionally admitted new students
- Produced 23% increase in total graduate enrollment and 43% increase in online enrollment within the first 1.5 years, fetching \$9.0M increase in Formula Funding for the 2019-21 biennium; graduate enrollment has now increased by 82% from 3,074 to 5,608, online programs enrollment by 235% from 618 to 2,072 within three years, earning a \$23M increase in Formula Funding for 2021-23 biennium!
- Established the Presidential Graduate Research Assistantship Program (PGRA) to recruit high quality graduate students for research-based programs across the university
- Expanded graduate recruitment base by establishing a new recruitment office in San Antonio and building innovative partnerships with top-ranked universities and high quality colleges in Ghana, India, and Mexico
- Increased the number of Accelerated Online Programs from 11 to 25 and enrollment by 235%
- Trained 85% of our 1,468 faculty in online teaching and over 900 received Quality Matters Certification

- Established a new enrollment-based stipends program for graduate program coordinators
- Established the Office of New Program Development and created an open process for soliciting and capturing ideas for new and innovative programs from faculty, students and staff, and established a comprehensive review and support process for developing new programs from conception to implementation; received over 70 new ideas and over 28 new programs are already in development
- Implemented four new Masters and two new PhD programs, and obtained UT System approval for four new Masters and three new professional doctoral programs
- Established the Office of Professional Education and Workforce Development to provide professional development opportunities to students including on-campus employment, and create new executive-level workforce training programs for the region
- Facilitated the establishment of a new High Performance Computing Center for faculty and student research
- Serving on the McAllen Economic Development Corporation Board and chair its Education Committee
- Established a new Center for Urban Ecology in collaboration with the City of McAllen to be located at Quinta Mazatlán, a city-owned birding center; Serving on the Friends of Quinta Mazatlán Board to foster sustainable development in the rapidly urbanizing Rio Grande Valley and to participate in a \$35M capital campaign for building the first Platinum LEED Certified building for the center in South Texas
- Established the Sustainability Fellows programs for greater faculty and student engagement in community sustainability and resilience projects within and outside the university
- Established the Campus Food Security Initiative that engages students in a sustainable approach to addressing hunger and fosters an attitudinal change towards the use of plant-based foods in daily diet
- Expanded UTRGV's Mathematics and Science Academy (MSA) to also provide fully online high school and undergraduate education to students (including home schoolers) in the US and internationally

2015-2018 - Founding Dean, College of Sciences, UTRGV

- Provided leadership to the college serving as its chief academic and administrative officer with responsibility for all personnel, budgetary, and curricular matters; the College consisted of departments of Biology, Chemistry and Physics, School of Mathematical and Statistical Sciences, School of Earth, Environmental and Marine Sciences, Center for Advanced Radio Astronomy, Center for Gravitational Wave Astronomy, Center for STEM Education, Center for Sustainable Agriculture and Rural Advancement, Mathematics & Science Academy, and the Nation's largest UTeach program with facilities located in Brownsville, Edinburg, Port Isabel, South Padre Island, and Boca Chica Beach, 182 faculty, 60 staff, over 4,000 undergraduate and graduate students, and an annual budget of over \$65M
- Interviewed *all* 175 faculty members individually within the first 100 days in office and developed and implemented an aggressive Strategic Growth Plan
- Evaluated/selected and appointed/confirmed all Associate Deans, Department Chairs, School Directors, and Program Directors; provided detailed job descriptions and metrics-based goals
- Established policies and procedures for the dean's office operations and information flow
- Worked diligently with associate deans, department chairs, school directors, and college faculty and developed metrics-based criteria for faculty annual, tenure, promotion and post-tenure reviews fully aligned with the College and University's new strategic plan goals
- Evaluated *all* 175 faculty and provided detailed written annual/tenure & promotion/post-tenure reviews
- Developed and implemented a compassionate Faculty Workload Policy
- Raised over \$1.0M in funding and established an Endowed Professorship in Mathematics
- Established a competitive Faculty Research Enhancement Seed Grants Program
- Established a competitive graduate student fellowships program based on a shared-funding model
- Increased annual external grant funding from \$10M to \$21M
- Established a new School of the Earth, Environmental and Marine Sciences
- Developed successful planning authority proposals for three new doctoral programs: Physics; Cellular, Molecular and Biomedical Sciences; and Mathematics and Statistics with Interdisciplinary Applications
- Developed and launched 2 new Bachelors: Statistics and Sustainable Agriculture & Food Systems
- Developed and launched four new Masters programs in:
 - Ocean, Coastal and Earth Sciences
 - Agricultural, Environmental, and Sustainability Sciences
 - Biochemistry and Molecular Biology
 - Applied Statistics and Data Science
- Established two new research and outreach centers: Center for Sustainable Agriculture and Rural Advancement and Center for Vector Borne Diseases

- Led the establishment of a portable laboratory complex to house the growing Coastal and Marine Science program and then received \$3.5M funding from the UTRGV Foundation for a permanent Marine Operations building for the program.
- Oversaw the construction of a new building for the STARGATE (Spacecraft Tracking and Astronomical Research into Giga-hertz Astrophysical Transient Emission) Technology Center
- Contributed to the design and construction of two new science buildings
- Build the nation's largest UTeach program that prepares STEM majors as K-12 teachers!
- Accomplished the college goal of providing atleast one in-depth research experience to 100% of our undergraduate majors by establishing research-based required capstone experiences in all departments!
- Established a HIGH Scholars program that engages 75 high school and undergraduate students in original research projects under the mentorship of faculty from across the university over the summer
- Opened the Mathematics and Science Academy on the Edinburg campus which admits over 200 high school juniors and seniors directly into the university's undergraduate programs
- Streamlined faculty search processes and recruited 12 new outstanding tenure-track faculty members
- Organized the First Annual College Conference and hosted student research poster and oral competition
- Established new awards for recognition of faculty excellence in research, teaching and service
- Established new awards for recognition of staff service and leadership excellence
- Increased faculty, student, staff, and college leadership diversity
- Fostered shared governance, collegiality, integrity, innovation, and transparency
- Increased undergraduate enrollment by 20% and graduate enrollment by 26%

2013-2015 - Department Head, Entomology & Plant Pathology, University of Tennessee at Knoxville, UTK

- Provided leadership for the Department of Entomology and Plant Pathology with 25 faculty and 8 staff members located on three campuses across the state with an annual budget over \$6M, and administered all personnel, budgetary, and curricular matters
- Established a new interdisciplinary doctoral program in Entomology, Plant Pathology & Nematology
- Developed an innovative funding mechanism that doubled the size of the graduate program
- Established a 5-year BS/MS program and initiated the development of an online MS program
- Engaged students in departmental activities and served as a mentor to the graduate student association
- Developed and implemented comprehensive metrics-based faculty evaluation criteria and annually reviewed all faculty members with detailed recommendations for further growth
- Fostered shared governance, collegiality, integrity, innovation, and transparency
- Resurrected, energized and empowered departmental committees
- Established interdisciplinary research clusters
- Recruited an outstanding women faculty member
- Increased student, faculty, and staff diversity
- Established two new endowments

2008-2013 – Founding Director, OARDC Research Internship Program, The Ohio State University, OSU

- Established and directed the new research internship program to provide campus-wide research opportunities to high school and undergraduate students during summer
- Developed a shared funding model in which the program provided 50% of the students wages and the faculty mentor provided the other 50% of the wages and all research-related expenses
- Acquired funding for the program through grants from various sources including area foundations
- Recruited and engaged 45-75 students in research under the mentorship of 20-35 faculty annually
- Over 25 students co-authored refereed original research papers in high quality journals and many more were acknowledged in refereed journal articles for their intellectual contributions

2004-2013 - Founding Director, Center for Urban Environment and Economic Development, OSU

- Established and directed the new interdisciplinary Center for Urban Environment and Economic Development to facilitate the development and commercialization of innovative technologies, products, and systems for enhancing urban ecosystem services and human well-being
- Acquired competitive funding for the center and engaged faculty, post-docs, and graduate students from multiple departments and colleges, and industry partners in the center's work
- Formed interdisciplinary research and product development teams

- Developed two new products and received a US patent

2003-2013 - Founding Director, Urban Landscape Ecology Program, OSU

- Established and directed the new interdisciplinary inter-college Urban Landscape Ecology Program (ULEP) to promote ecological approaches to urban landscape planning and management
- Established partnerships with industry, city planners, landscape designers, and homeowners
- Acquired funding through grants and contracts including industry and foundations
- Formed interdisciplinary teams and led research on urban ecosystem services evaluation and enhancement, healthy food and renewable energy self-reliance, ecological landscape management, urban agriculture, stormwater management, and soil and water pollution mitigation
- Organized monthly seminars and two national conferences

1995-1997 – Group Leader, Biosys Inc., Columbia, Maryland

- Developed new formulations for nematode and viral products
- Supervised, motivated and performed annual reviews of two senior research scientists, three junior research scientists and three research associates
- Assisted Pilot Plant and Manufacturing Departments in the production of the new formulations
- Developed and disseminated monthly reports and provided monthly updates to the senior management
- Represented the company at professional meetings and coordinated research with universities

1993-1995 - Senior Scientist and Manager, Biosys Inc., Palo Alto, California

- Developed a new production process for a nematode-based biocontrol product for molecrickets
- Developed new quality control protocols for nematode and viral products
- Submitted two process patent disclosures and published three peer-reviewed papers
- Supervised, motivated and annually reviewed two research scientists and five research associates
- Assisted the Pilot Plant in the scale-up of new production processes
- Developed and disseminated monthly reports within the company
- Represented the company at professional meetings

E. Teaching and Student Service

1. Courses Taught

2015	EPP 520 (Nematology, 2+1 cr); SP. Bernard and Grewal
2014	EPP 604 (Advanced Topics in Nematology – Induced Systemic Resistance, 3 cr); AU. Grewal
2014	EPP 603 (Research Planning – Fungal Endosymbionts and Biological Control, 3 cr); AU. Grewal
2013	EPP 604 (Advanced Topics in Nematology – Foliar Nematodes, 3 cr); AU. Grewal
2012	Entomology 6701 (Biodiversity Analysis for Ecosystem Stability and Resilience, 2 cr); AU. Grewal
2011	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal and Canas
2009	Entomology 694 (Urban Agriculture and Ecosystem Services, 4 cr); SU. Grewal, Kleinhenz, Ling
2007	Entomology 694 (Environmental Bioindicators, 3+2 cr); SU. Grewal
2007	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal and Horn
2005	Entomology 795D (Ecological Landscape Design-II, 3+0 cr); AU. Grewal
2005	Entomology 694 (Ecological Landscape Design-I, 2+2 cr); SU. Grewal, Cardina, Georg
2005	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal and Horn
2003	Entomology 694 (Ecological Nematology, 2+2 cr); SU. Grewal
2003	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal and Horn
2002	Entomology 795D (Symbiosis and Biological Control, 2+0 cr); SU. Grewal
2001	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal and Horn
1999	Entomology 650 (Biological Control, 3+1 cr); SP. Grewal, Horn, Hall

2. Graduate Students Mentored

a. Served as Major Professor [15 Ph.D. and 10 MS]

Janani Hariharan, M.S. Environmental Science, graduated July 2015

Thesis title: SOIL MICROBIAL COMMUNITIES UNDER DIFFERENT TYEPES OF TILLAGE AND CROP ROTATIONS

Kuhuk Sharma, Ph.D. Environmental Science, graduated July 2014

Thesis title: ASSESMENT OF HEAVY METAL CONTAMINATION AND RESTORATION OF SOIL FOOD WEB STRUCTURAL COMPLEXITY IN URBAN VACANT LOTS

Harit K. Bal, Ph.D. Entomology, graduated Jan 2013, Major Professor

Thesis title: DISPERSAL OF ENTOMOPATHOGENIC NEMATODES WITH CONTRSATING FORAGING BEHAVIOR

Jennifer Reeves, M.S. Environmental Science, graduated December 2012

Thesis title: ASSESSMENT OF SOIL HEALTH IN URBAN COMMUNITY GARDENS

Priyanka Yadav, M.S. Entomology, graduated March 2012

Thesis title: BELOW GROUND BIOLOGICAL CONTROL IN URBAN LANDSCAPES AND ASSESSMENT OF FACTORS INFLUENCING ITS ABUNDANCE

Patchareewan Maneesakorn, Ph.D., Entomology, graduated March 2010, Major Co-Professor

Thesis title: PHYLOGENETIC AND CO-PHYLOGENTIC RELATIONSHIPS BETWEEN ENTOMOPATHOGENIC NEMATODES AND THEIR SYMBIOTIC BACTERIA

Hanbae Yang, Ph.D. Environmental Science, graduated March 2010, Major Co-Professor

Thesis title: DEVELOPMENT OF A NEW BIPHASIC BIORETENTION SYSTEM FOR STORMWATER FLOW AND POLLUTANT MANAGEMENT IN URBAN LANDSCAPES

Priyanka Yadav, M.S. Environmental Science, graduated August 2009

Thesis title: FACTORS AFFECTING MOSQUITO POPULATIONS IN CREATED WETLANDS

SunJeong Park, Ph.D. Environmental Science, graduated August 2009

Thesis title: ANTHROPOGENIC INFLUENCE OF URBAN DEVELOPMENT ON THE SOIL NITROGEN FIXING BACTERIA, NEMATODE COMMUNITY, AND NUTRIENT POOLS

E. Erin Morris, MS. Entomology, graduated March 2009

Thesis title: DEVELOPMENT OF BIOLOGICAL CONTROL METHODS FOR THE ADULT JAPANESE BEETLE

Alfred Alumai, Ph.D. Entomology, graduated December 2008

Thesis title: URBAN LAWN MANAGEMENT: ADDRESSING THE ENTOMOLOGICAL, AGRONOMIC, AND SOCIAL DRIVERS

Zhiqiang Cheng, Ph.D. Environmental Science, graduated Aug' 2007

Thesis Title: ECOLOGY OF URBAN LAWNS: THE IMPACT OF ESTABLISHMENT AND MANAGEMENT ON PLANT SPECIES COMPOSITION, SOIL FOOD WEBS, AND ECOSYSTEM FUNCTIONING

Mamta Singh, Ph.D., Environmental Science, graduated Jul' 2007

Thesis Title: SOIL ORGANIC CARBON POOLS IN TURFGRASS SYSTEMS OF OHIO

Ruisheng An, Ph.D. Entomology, graduated June 2007

Thesis Title: GENE EXPRESSION IN *MORAXELLA OSLOENSIS*, *PHOTORHABDUS TEMPERATA* AND *XENORHABDUS KOPPENHOEFERI* DURING HOST INFECTION

Shabeg S. Briar, Ph.D. Plant Pathology, graduated March 2007, Co-Major Professor

Thesis Title: NEMATODES AS BIOINDICATORS OF SOIL FOOD WEB HEALTH IN AGROECOSYSTEMS: A CRITICAL ANALYSIS

Amr T. E. Saeb, Ph.D. Plant Pathology, graduated August 2006

Thesis Title: PHYLOGENETIC AND POPULATION GENETIC STUDIES ON SOME INSECT AND PLANT ASSOCIATED NEMATODES

Yadwinder S. Deol, M.S. Entomology, graduated August 2006

Thesis Title: DEVELOPMENT OF A NOVEL DELIVERY SYSTEM FOR ENTOMOPATHOGENIC NEMATODES

Prapassorn Bussaman, Ph.D. Entomology, graduated August 2005, Co-Major Professor

Thesis Title: BIOLOGY AND BIOLOGICAL CONTROL OF THE MUSHROOM MITE

Mussammat Nahar, Ph.D. Plant Pathology, graduated November 2005, Co-Major Professor

Thesis Title: DYNAMICS OF NEMATODES TROPHIC DIVERSITY AND NUTRIENT POOLS IN VEGETABLE FARMS TRANSITIONING FROM ORGANIC MANAGEMENT

Sukhinder K. Sandhu, M.S. Entomology, graduated July 2005

Thesis Title: GENETIC AND MOLECULAR ANALYSIS OF INFECTIVE JUVENILE LONGEVITY AND STRESS TOLERANCE IN THE ENTOMOPATHOGENIC NEMATODE *HETERORHABDITIS BACTERIOPHORA*

Corrie Yoder, M.S. Entomology, graduated in December 2004

Thesis Title: EVASIVE AND DEFENSIVE BEHAVIORS OF WHITE GRUB SPECIES AGAINST ENTOMOPATHOGENIC NEMATODES

Alfred Alumai, M.S. Entomology, graduated in December 2004

Thesis Title: THE EFFECTS OF TURFGRASS MANAGEMENT PRACTICES ON ENTOMOPATHOGENIC NEMATODES

Sandra Garces, M.S. Entomology, graduated in May 2004, Co-Major Professor

Thesis Title: POTENTIAL OF ENTOMOPATHOGENIC NEMATODES AND THEIR SYMBIOTIC BACTERIA FOR THE MANAGEMENT OF GRAPE PHYLLOXERA

Brian Kunkel, Ph.D. Entomology, graduated in January 2003

Thesis Title: PLANT FUNGAL ENDOSYMBIONTS ALTER HOST-PARASITE RELATIONSHIPS BETWEEN GENERALIST HERBIVORES (LEPIDOPTERA: NOCTUIDAE) AND AN ENTOMOPATHOGENIC NEMATODE

Li Tan, Ph.D. Entomology, graduated in December 2002

Thesis title: VIRULENCE MECHANISMS OF THE NEMATODE *PHASMARHABDITIS HERMAPHRODITA* AND ITS ASSOCIATED BACTERIUM *MORAXELLA OSLOENSIS* TO THE GRAY GARDEN SLUG *DEROCERAS RETICULATUM*

b. other student activities

Graduate Studies Committee member:

Satyendra Pothula, Ph.D. Nematology at the University of Tennessee at Knoxville (Major Advisor Ernest Bernard), graduated May 2019

Shalini Yerukala, Ph.D. Nematology at the University of Tennessee at Knoxville (Major Advisor Bonnie Ownley), graduated December 2019

Ratanasri Mallipedi, Ph.D. Entomology at the University of Tennessee at Knoxville (Major Advisor Juan Luis Jurat-Fuentes), graduated October 2019

Gary Philips, Ph.D. Nematology at the University of Tennessee at Knoxville (Major Advisor Ernest Bernard), graduated October 2017

Julia Ferguson, MS. Entomology (Major Advisor, Jerome Grant), graduated July 2016

Alemayehu W. Habteweld, Ph.D. student in Nematology at Michigan State University (Major Advisor Haddish Melakeberhan), graduated August 2015

Ellie Walsh, Ph.D. Plant Pathology (Major Advisor, Chris Taylor), graduated July 2015

Caitlin Burkman, M.S. Entomology (Major Advisor, Mary Gardiner), graduated July 2014

Christian Chiriboga, Ph.D. Entomology (Major Advisor, Dan Herms), graduated May 2013

Terri L. Hctor, MS. Entomology at Purdue University (Major Advisors Douglas S. Richmond and Timothy J. Gibb), graduated May 2011

Sougata Bardhan, Ph.D. Soil Science (Major Advisor, Warren Dick), graduated July 2010

Darlene Florence, MS Soil Science (Major Advisor, Warren Dick), graduated July 2009

Jennifer Andon, M.S. Entomology (Major Advisor, David Shetlar), graduated July 2008.

Stephanie Miller, M.S. Entomology (Major Advisor, Celeste Welty), graduated May 2005

Xiaodong Bai, Ph.D. Entomology (Major Advisor, Saskia Hogenhout), graduated July 2004

Janet Lawrence, Ph.D. Entomology (Major Advisor, Casey Hoy), graduated autumn 2004

Jane Patterson Fife, Ph.D. Food, Agricultural and Environmental Engineering, (Major Advisor, Erdal Ozkan), graduated May 2003

Heather Smith, M.S. Microbiology, University of Central Florida, Orlando, graduated July 2001

Independent Undergraduate Research Study Advisor:

Alexandra Knight, BS Biology, Walsh University, February, 2010- May 2011

Marc Christian, BS Biology and Mathematics, The College of Wooster, February, 2009- May 2010

Lorna Johnston, BS Biology, The College of Wooster, February 2007 – December 2008

Stephanie Wynderk, BS Biology, The College of Wooster, October 2004 to May 2005

Rajan Dhillon, Stanford University, January 1994- August 1994

Charles Shupe, Rutgers University, March 1992- December 1992

External Examiner for Ph.D. Theses:

Rosaline Mary, Bharthiar University, Coimbatore, India, 2012

Heba Mohammed Mahmoud Ahmed, Faculty of Science, Cairo University, Giza, Egypt, 2012

Nehad Abdel-Hameed S. Abdel-Rehman, Faculty of Science, Cairo University, Giza, Egypt, 2001

3. Post-doctoral Trainees (Name and dates in my laboratory)

Dr. Harit K. Bal from The Ohio State University, Ohio, April 2013- August 2016

Dr. Ruisheng An from The Ohio State University, Ohio, July 2007- November 2015

Dr. Zhiqiang Cheng from The Ohio State University, Ohio, September 2007- May 2013

Dr. Xiaodong Bai from The Ohio State University, Ohio, January 2006- June 2011

Dr. Jay Saimandir from Mississippi State University, Mississippi, July 2007-December 2008

Dr. Amr Saeb from The Ohio State University, Ohio, January 2007-February 2008

Dr. Loren Byrne from Pennsylvania State University, June 2006- June 2007

Dr. Ganpati Jagdale from Memorial University of Newfoundland, St John's, Canada, from November 1998-August 2007

Dr. Seppo Salminen from The Ohio State University, Wooster, Ohio, July 1999-July 2007

Dr. Andras Fodor from Evotos University, Budapest, Hungary, from January 2004 – May 2006

Dr. Douglas Richmond from The Ohio State University, July 2000- June 2004

Dr. Elizabeth De Nardo from the National Research Center for Environmental Monitoring and Impact Assessment, EMBRAPA, Jaguariuna-SP, Brazil- from January 2003 – November 2004

Dr. Sukhbir K. Grewal from the University of Maryland, Oct 1999 – January 2003

Dr. Somasekhar Nethi from Indian Council of Agricultural Research, Coimbatore, India, Jan 2000 – December 2001

Dr. Mavji Patel from Imperial College London, March 2001- July 2001
 Dr. Xiaodong Wang from Tsukuba University, Japan, October 1998 - January 2001
 Dr. Timothy Miklasiewicz from the Ohio State University - May 1998 - March 2000
 Dr. Veriender S. Malik from Haryana Agricultural University, India, January 1999 - November 1999
 Dr. Sudha Venkatachari from Indian Agricultural Research Institute, India, June 1995 - January 1997

4. Visiting scientists hosted (Name and dates in my laboratory)

Dr. Patchareewan Maneeshakorn, Research Scientist, Thailand Agricultural University, Bangkok, Thailand from March 2014 to August, 2014
 Dr. Kamaljit S. Suri, Assistant Professor, Punjab Agricultural University, Ludhiana, India from December 2013 to May, 2014
 Dr. Vikas Jindal, Assistant Professor, Punjab Agricultural University, Ludhiana, India from March 2010 to April, 2011
 Dr. Geetika Banta, Assistant Professor, Punjab Agricultural University, Ludhiana, India from July 2010 to April, 2011
 Dr. Ugur Uslu, Assistant Professor, Konya, Turkey for 6 months from February to July, 2009
 Dr. Marcio Voss, Senior Scientist, EMBRAPA Trigo, Passo Fundo, Brazil from June 2005 to May 06
 Dr. Angel Torres, Scientist, INIA-Tachira, Carretera Rubio-Delicias, Bramon, Tachira, Venezuela for one month in November 2004
 Dr. Marinade Aguilera, Professor of Nematology at the Federal University, Arraras, Sao Paulo, Brazil for one week in October 2003
 Dr. Arun K. Yadav, Professor of Entomology, Department of Zoology, N.E. Hill University, Shillong, India for one week in October 2003
 Dr. Cisia Chkhubianishvili, Professor and Head, Department of Biological Control, Kanchaveli L. Research Institute of Plant Protection, Tbilisi, Republic of Georgia spent 10 days in November 2000
 Dr. Manana Lortkipandize, Chief Scientist, Institute of Zoology, Georgian Academy of Sciences, Tbilisi, Republic of Georgia spent 10 days in November 2000
 Dr. Krishnayya Pulipaka, Assistant Professor, Department of Entomology, ANGR Agricultural University, Bapatila, AP, India from July 2000 to November 2000
 Dr. Elizabeth De Nardo, Coordinator of Quarantine Laboratory for biological control agents, National Research Center for Environmental Monitoring and Impact Assessment, EMBRAPA, Jaguariuna-SP, Brazil- from September 1998 to December 2002
 Dr. Veriender S. Malik, Professor of Entomology, Haryana Agricultural University, Hissar, India - from September 1998 to February 1999

F. Extramural Research Funding [Career total = \$19,925,003; Lead PI = \$10,563,793]

2021	\$2,997,279	HSI Institutional Transformation Project: Improving Undergraduate STEM Education Through Family-Centered Pedagogy (P.S. Grewal, M. De La Trinidad, Guitierrez, J.L., M.L. Ortiz and N.A. Pereyera). NSF-HSI-IUSE Grant 2021-2026.
2020	\$699,077	Acquisition of a GPU-Accelerated Cluster, High Performance Rio Grande Valley Cluster (HiRGV) (Y. Chu, N. Dimakis, S.D. Mohanty, D. Kim and P.S. Grewal). NSF-MRI Grant 2020-2023.
2017	\$240,000	An Integrated Approach to Graduate Research, Education, and Engagement (IAGREE) in Sustainable Food and Agricultural Systems at the Hispanic-Serving Institution University of Texas-Rio Grande Valley (A. Racelis, P.S. Grewal, C. Gabler, Y. Mao, and G. Bennack). USDA-NIFA-NNF-Higher Education Grant 2017-2020.

2014	\$17,750	<i>Tuta absoluta</i> tomato survey (P.S. Grewal and F. Hale), USDA-APHIS Farm Bill Grant Agreement, 2014-2015.
2014	\$105,000	Tennessee Coordinated Agricultural Project Survey (F. Hale, J. Grant, S. Stewart and P.S. Grewal). USDA-APHIS CAPS Grant Agreement 2014-2015.
2013	\$100,000	Infection biology and management of foliar nematodes on hosta and other shade tolerant ornamentals (P.S. Grewal and R. An). American Hosta Society and University of Tennessee Competitive Research Grant. 2013-2015.
2012	\$750,000	Assessing, modeling, and maximizing ecosystem services in long-term and transitioning organic farming systems (P.S. Grewal, K.R. Islam, E.L. McCoy, S. Kumarappan, and A. Sundermeier), NIFA Organic Transitions Competitive Research Grant 2012-2015.
2012	\$200,000	Sustainable Management of grape root borer in vineyards (P.S. Grewal, G. Gao, Vickner, S. & H. Zhu), USDA-PMAP Competitive Research Grant 2012-2014.
2012	\$75,000	A demonstration pilot for urban agriculture, ecology, and entrepreneurs (K. Bennett, P.S. Grewal, J. Kovach, P. Ling, M. McMahon, J. Tansky, B. Hanlon, G. Kaye, E.M. Williams, M. Jones), OSU International Poverty Solutions Center and Food Innovation Center Joint Competitive Research Grant 2012-2013.
2012	\$25,000	Improving Local Food Security and Promoting Health in Urban Environments Through Window-based Hydroponic Food Production Systems (J. Lee, P.S. Grewal, and Z. Bohrerova), OSU Food Innovation Center Competitive Research Grant 2012-2013.
2012	\$50,000	A novel approach to plant protection through durable systemic resistance (P.S. Grewal and E. van der Knaap). OARDC Seeds Grant Competition, 2012-2013.
2012	\$6,000	Integrated control of pests and diseases in tomatoes (P.S. Grewal and P.L. Phelan). OARDC Small Industry Grant Competition, 2012-2013.
2011	\$178,929	Maximizing ecosystem services of the soil food web in organic farming systems (P.S. Grewal and K.R. Islam), The Ceres Trust Competitive Research Grant 2012-2014.
2011	\$25,000	A comprehensive costs and benefits analysis of urbanizing food systems (P.S. Grewal, M. Leiblein and R.L. Scharff), OSU Food Innovation Center Competitive Research Grant 2011-2012.
2010	\$870,000	An agrarian urbanist overlay for central city development (J. Tiniano, K.B. Jones, P.S. Grewal, M. Rabe, M. Wagenbrenner), US Department of Housing and Urban Development Community Challenge Planning Grant 2011-2013.
2010	\$25,000	Localizing urban food systems: Assessing capacity of an urban neighborhood for self-reliance in fresh produce (P.S. Grewal, M. Kleinhenz, P. Ling, J. Saldanha and T. Blaine), OSU Food Innovation Center Competitive Research Grant 2010-2011.
2010	\$10,000	OARDC Research Internships Program: Enhancing interest in science and technology by engaging high school and undergraduate students in real-time research projects (P. S. Grewal), GAR Foundation 2010-2011.
2009	\$279,500	Urban parks and vacant lands as mechanisms of ecological and social stability in the Cleveland Urban Ecosystem (B.M. Walton, J.J. Mach, T. Schwarz, P.S. Grewal and D. Beach), NSF-ULTRA-EX Competitive Research Grant 2009-2012.
2009	\$327,450	Increasing services invertebrate services in agroecosystems (C.W. Hoy and P.S. Grewal), USDA-NRI Competitive Research Grant 2009-2012.
2009	\$49,966	Identifying stakeholder needs for establishing vibrant urban specialty crops enterprises (P.S. Grewal, Batte, M., Cardina, J., Erbaugh, M., Hoy, C.W., Kleinhenz, M., and Ling, P.), USDA-SCRI Competitive Research Grant 2009-2010.
2009	\$59,894	OARDC Research Internships Program: Enhancing Interest in Science and Technology by Engaging High School and Undergraduate students in real-time research projects (P.S. Grewal), BETHA Grant 2009-2010.

2009	\$10,000	OARDC Research Internships Program: Enhancing Interest in Science and Technology by Engaging High School and Undergraduate students in real-time research projects (P.S. Grewal), GAR Foundation 2009-2010.
2009	\$12,000	OARDC Research Internships Program: Enhancing Interest in Science and Technology by Engaging High School and Undergraduate students in real-time research projects (P.S. Grewal), Ashland Bioscience Consortium 2009-2010.
2009	\$50,000	Effect of organic and inorganic fertilizers on turfgrass ecosystem health (P.S. Grewal). OARDC Matching Grant Competition, 2008-2010.
2008	\$126,045	Establishing entomopathogenic nematodes for long-term control of white grubs in nurseries (P.S. Grewal, D. Herms), USDA-PMAP Competitive Research Grant 2008-2011.
2008	\$100,000	Virulence mechanisms of the entomopathogenic <i>Photorhabdus</i> and <i>Xenorhabdus</i> bacteria (P.S. Grewal, G. Rajashekara, and D.H. Dean). OARDC Interdisciplinary Grant Competition, 2008-2010.
2008	\$125,000	Long-term effects of organic fertilizers on the soil food web, nutrient cycling, and turfgrass quality and resistance to biological and environmental stresses. (P.S. Grewal). MTD Corporation 2008-2011.
2008	\$10,500	Assessing nutrient runoff from lawns established on topsoil and sub soil (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2008-2009.
2008	\$11,000	Effect of timing of application of new <i>Bacillus thuringiensis</i> formulations for the curative management of white grubs (P.S. Grewal), Valent Bioscience, 2008.
2008	\$43,500	Evaluation of new formulations of various bifenthrin formulations for the control of white grubs and billbugs in turfgrass (P.S. Grewal), FMC Corporation, 2008.
2007	\$101,000	Center for Urban Environment and Economic Development (P.S. Grewal <i>et al.</i>). AgBiosciences Innovative Grants Program, 2007-2009.
2007	\$85,000	Effect of organic lawn fertilizers on quality and water stress of three turfgrass species (P.S. Grewal). MTD Corporation 2007-2008.
2007	\$10,000	Effect of turfgrass management practices on carbon sequestration in turfgrass (P.S. Grewal). Ohio Turfgrass Foundation, 2007-2008.
2007	\$8,000	Potential of nutrient runoff from lawns established on topsoil and sub soil (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2007-2008.
2007	\$24,000	Laboratory and field evaluations of new <i>Bacillus thuringiensis</i> formulations for the curative management of white grubs (P.S. Grewal), Valent Bioscience, 2007.
2007	\$12,000	Evaluation of formulations of various insecticides for the control of white grubs (P.S. Grewal), FMC Corporation, 2007.
2007	\$2,900,000	Linking watershed research and GK-12 education within an ecosystem context (R. Moore, L. Williams, C.W. Hoy, V. Bouchard, P. Goebel, A. Rodewald, D. Stinner, and P.S. Grewal). NSF GK-12 Competitive Research Grant 2007-2010.
2006	\$50,000	Developing a novel commercial delivery system for entomopathogenic nematodes (P. S. Grewal). OARDC New Enterprise Competitive Research Grant 2007-2009.
2006	\$75,000	Center for Urban Environment and Economic Development (P.S. Grewal <i>et al.</i>) AgBiosciences Innovative Grants Program, 2006-2007.
2006	\$40,000	Effect of organic lawn products on turfgrass quality, above and below ground biomass, tissue nutrients and alkaloids (P.S. Grewal). MTD Corporation 2006-2007.
2006	\$20,000	Development of a new biological product for slug control (P.S. Grewal). Horticulture Research Institute Competitive Grant 2006-2007.
2006	\$10,000	Effect of turfgrass management practices on carbon sequestration in turfgrass. (P.S. Grewal) Ohio Turfgrass Foundation, 2006-2007.

2006	\$7,000	Management of lawns established on top and sub soil: Nitrogen mineralization, nematode and microbial community dynamics, and insect and weed incidence (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2006-2007.
2006	\$16,000	Evaluation a new <i>Bacillus thuringiensis</i> formulations for the curative management of white grubs (P.S. Grewal), Valent Bioscience, 2006.
2006	\$1,400	Evaluation of new organic product for the white grub control (P.S. Grewal), Neudorff North America, 2006.
2005	\$1,840,000	Genome sequencing of <i>Heterorhabditis bacteriophora</i> : Exploiting the unique biology and biological pest control potential of an entomopathogenic nematode (P.S. Grewal, B.J. Adams, T. Ciche, R. Gaugler, and P. Sternberg). Jointly funded by the National Human Genome Research Institute and the USDA-NSF Microbial Genome Sequencing Competitive Research Grants Program 2005-2008.
2005	\$72,500	Building a novel participatory approach to implementing integrated pest management in commercial lawncare (P.S. Grewal, J. Cardina, D.J. Shetlar, J. Rimelspach, & J. Kovach). USDA-NC-IPM Competitive Research Grant 2005-2007.
2005	\$150,000	Center for Urban Environment and Economic Development (P.S. Grewal <i>et al.</i>). AgBiosciences Innovative Grants Program, 2005-2007.
2005	\$50,000	Development of a new biological product for the slug control (P.S. Grewal). OARDC New Enterprise Grant Competition, 2005-2007.
2005	\$19,000	Cost-effective long-term control of white grubs in nurseries through the establishment of entomopathogenic nematodes (P.S. Grewal, D. Herms, K.T. Power). Horticulture Research Institute Competitive Grant 2005-2006.
2005	\$10,000	Effect of turfgrass management practices on carbon sequestration in turfgrass. (P.S. Grewal) Ohio Turfgrass Foundation, 2005-2006.
2005	\$8000	Nitrogen mineralization, nematode and microbial community dynamics, and insect and weed incidence in urban lawns (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2005-2006.
2005	\$7,000	Evaluation of new formulations of insecticides for the curative management of white grubs (P.S. Grewal), Andersons Inc., 2005.
2005	\$5,000	Evaluation a new <i>Bacillus thuringiensis</i> bioinsecticide for the curative management of white grubs (P.S. Grewal), Abbott Bioscience, 2005.
2005	\$1,000	Evaluation different formulations of a <i>Bacillus thuringiensis</i> bioinsecticide for the curative management of white grubs (P.S. Grewal), SDS Corporation, 2004.
2004	\$250,000	Urban Landscape Ecology Program: an interdisciplinary research, education, and outreach initiative (P.S. Grewal <i>et al.</i>). OARDC Innovation Grants Program, 2004-2009.
2004	\$96,500	Developing an integrated pest management approach for lawns (P.S. Grewal, J. Cardina and D.S. Richmond). USDA-NC-IPM Competitive Research Grant 2004-2006.
2004	\$195,000	Optimizing white grub control with entomopathogenic nematodes: Interspecific variability in host parasite interactions (A.M. Koppenhoffer & P.S. Grewal). USDA-NRI Competitive Research Grant 2003-2005.
2004	\$200,000	Habitat characteristics and entomopathogenic nematode persistence in agroecosystems (C.W. Hoy and P.S. Grewal). USDA-NRI, 2004-2007.
2004	\$100,000	Virulence mechanisms of <i>Moraxella osloensis</i> to the slug <i>Deroceras reticulatum</i> (P.S. Grewal, S. Sreevatsan, and R. Hammond). OARDC Interdisciplinary Grant Competition, 2004-2006.
2004	\$6,000	Control of foliar nematodes in nurseries and landscapes (P.S. Grewal, G.B. Jagdale, and K.T Power). USDA-IR-4 Biopesticide Research Grant Competition, 2003.
2004	\$7000	Effect of sod on soil erosion control from urban lawns. (P.S. Grewal and E. McCoy). International Turf Producers Foundation Competitive Grants, 2004-2005.

2004	\$6000	A novel participatory approach to IPM in lawn care (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2004-2005.
2004	\$10,000	Effect of turfgrass management on soil ecosystem functioning: soil nematode community analysis and nutrient pools. (P.S. Grewal) Ohio Turfgrass Foundation, 2004-2005.
2004	\$3,200	Evaluation a new <i>Bacillus thuringiensis</i> bioinsecticide for the curative management of white grubs (P.S. Grewal), Dow Agrobiosciences, 2004.
2004	\$2,000	Evaluation different formulations of a <i>Bacillus thuringiensis</i> bioinsecticide for the curative management of white grubs (P.S. Grewal), SDS Corporation, 2004.
2003	\$25,000	Determining the mechanism of symbiosis between the slug-parasitic nematode <i>Phasmarhabditis hermaphrodita</i> and associated bacteria (P.S. Grewal and M.J. Wilson). OARDC Interdisciplinary Grant Competition, 2003-2004.
2003	\$6000	Effect of mowing practices on alkaloid production and pest resistance in endophytic grasses (P.S. Grewal). Ohio Lawn Care Association Competitive Grants, 2003-2004.
2003	\$16,000	Commercial potting media as delivery system for entomopathogenic nematodes (P.S. Grewal, G.B. Jagdale), OARDC Small Industry Competitive Grant, 2003-2004.
2003	\$25,000	Exploring additive and synergistic effects of newer insecticides for the curative management of white grubs (P.S. Grewal) Bayer Corporation, 2003.
2003	\$8,000	Essential oils as alternatives to chemical insecticides for caterpillars in turfgrass (P.S. Grewal, K.T. Power), USDA-IR-4 Biopesticide Research Grant Competition, 2003.
2003	\$10,000	Interactions between weeds and insects in turfgrass (P.S. Grewal), Ohio Turfgrass Foundation, 2003-2004.
2002	\$145,000	Implementing a novel biological approach for controlling plant-parasitic nematodes (P.S. Grewal, R. Giblin-Davis and W.T. Crow, USDA-PMAP Competitive Research Grant 2002-2005.
2002	\$400,000	Paths of transition: Strategies for peri-urban organic farmers (M. Kleinhenz, McSpadden Gardener, J. Cardina S.A. Miller, M. Batte, P.S. Grewal, D. Stinner, USDA-CSREES Competitive Research Grant 2002-2005.
2002	\$18,000	Assessing potential of molluscicidal nematodes for slug control (P.S. Grewal and S.K. Grewal). Horticultural Research Institute Competitive Grants, 2002-2003.
2002	\$7,500	Building a biologically based IPM approach for pest management in turfgrass (P.S. Grewal, D.S. Richmond and J. Cardina). Ohio Lawn Care Association Competitive Grants, 2002-2003.
2002	\$10,000	Variation in the defensive behavior of white grub species against entomopathogenic nematode species (P.S. Grewal). Ohio Turfgrass Foundation, 2002-2003.
2001	\$70 000	A novel approach to expanding the use of entomopathogenic nematodes from soil to foliage (P.S. Grewal). OARDC Matching Grant Competition, 2001-2002.
2001	\$10,000	Factors affecting the natural occurrence of entomopathogenic nematode on golf courses in Ohio. (P.S. Grewal) Ohio Turfgrass Foundation, 2001-2002.
2001	\$65,000	Building a turfgrass research field facility in Wooster. (P.S. Grewal and E. McCoy) Ohio Turfgrass Foundation, 2001-2005.
2000	\$156 000	Longevity and stress tolerance of infective juvenile entomopathogenic nematodes (P.S. Grewal). USDA-NRI (Entomology/Nematology) Competitive Research Grant 2000-02.
2000	\$170,000	Building a biologically-based approach to manage insect and weed pests in turfgrass (P.S. Grewal & J. Cardina, USDA-NRI (Biologically-based pest management) Competitive Research Grant 2000-2003.
2000	\$144,000	Implementing insecticidal nematodes in nurseries, greenhouses and landscapes (P.S. Grewal, R.K. Lindquist & C. Young), USDA-PMAP Competitive Research Grant 2000-2003.

2000	\$1,800,000	Revitalizing small and mid-sized farms: Organic research, education, and extension (B. R. Stinner, S.A. Miller, D. Stinner, R. Moore, J. Cardina, C.W. Hoy, P.S. Grewal, M. Kleinhenz, D. Doohan, F. Michel & J. Kovach, USDA-IFAFS (Small Farms) Competitive Research Grant 2000-2004.
2000	\$98,000	A High Performance Liquid Chromatogram and electrospray Mass Spectrometer (P.S. Grewal, M. Klein, D. Doohan & D. Herms), OARDC Equipment Grant, 2000.
2000	\$24,000	Control of foliar nematodes infesting nursery ornamentals (P.S. Grewal) OARDC Small Industry Competitive Research Grant, 2000-2001.
2000	\$5,000	Biology and biological control of foliar nematodes infesting <i>Hosta</i> (P.S. Grewal & G.B. Jagdale) Horticultural Research Institute Competitive Grants, 2000-2001.
2000	\$14,000	Developing a novel white grub control strategy based on the synergism between entomopathogenic nematodes and Imidacloprid/Thiamethoxam (P.S. Grewal) OARDC Small Industry Competitive Research Grant, 2000-01.
2000	\$20,000	Population dynamics of an entomopathogenic nematode: Analyzing a sustained inoculative release of <i>Heterorhabditis bacteriophora</i> (R.A.J. Taylor & P.S. Grewal), OARDC Competitive Seed Grant 2000-2001.
2000	\$15,000	Filed evaluations of entomopathogenic nematode species and strains for the control of white grubs in turfgrass. (P.S. Grewal) Ohio Turfgrass Foundation, 2000-2001.
1999	\$100,000	Developing molluscicidal nematodes for biological control of mollusk pests (P.S. Grewal & R.H. Hammond), OARDC Matching Grant Competition, 1999-2000.
1999	\$100,000	Building an ecosystem approach to pest management in turfgrass: Evaluating interactions among endophytic grasses, herbivores, and weeds (P.S. Grewal, D. Doohan & M. Quigley), OARDC Interdisciplinary Team Research Competition, 1999-2000.
1999	\$10,580	Pesticide -free alternatives for control of agricultural pests: Multi-media aids and in- service training program for using insecticidal nematodes (P.S. Grewal), Lindbergh Foundation, 1999-2001.
1999	\$15,000	Biology and biological control potential of nematode parasites of slugs (P.S. Grewal) Horticultural Research Institute Competitive Grants, 1999-2000.
1999	\$30,000	Direct application of desiccated entomopathogenic nematodes for foliage pest control in turfgrass (P.S. Grewal) MicroBio Ltd., UK, 1999-2001.
1999	\$15,000	Interactions between insect pests and weeds in turfgrass (P.S. Grewal), Ohio Turfgrass Foundation, 1999-2000.
1998	\$100,000	Entomopathogenic nematodes for pest control in vegetables in the Great Lakes Region (P.S. Grewal & C.W. Hoy), USDA-PMAP Competitive Research Grant 1998-2001.
1998	\$310,000	Implementation of a novel biological control strategy for plant-parasitic nematodes (E.E. Lewis, M. Raupp, P.S. Grewal, M.G. Klein, S.R. Alm & G. Tylka), USDA- FRA, 1998-2000.
1998	\$150,000	Development of rearing techniques and biological control for the grape root borer (R.N. Williams & P.S. Grewal), USDA-Viticulture Consortium, 1998-2006.
1998	\$20,000	Heat-shock proteins of entomopathogenic nematodes (P.S. Grewal & D.L. Denlinger), OARDC Competitive Seed Grant 1998-1999.
1998	\$25,000	Biology, etiology, and biological control of foliar nematodes infesting <i>Hostas</i> (P.S. Grewal) American Hosta Society Competitive Grants, 1998-2000.
1998	\$36,000	Factors affecting the virulence of molluscicidal nematodes (P.S. Grewal) MicroBio Ltd., UK, 1998-2000.
1998	\$25,000	Developing application strategies for halofenozide (P.S. Grewal) Rohm & Haas, 1998-2000.

1998	\$23,500	Evaluations of insecticides against turfgrass insects (P.S. Grewal) several companies, 1998-2000.
1998	\$15,000	Variation in the entomopathogenic nematode species and strains for the control of white grubs in turfgrass. (P.S. Grewal) Ohio Turfgrass Foundation, 1998-1999.
1997	\$20,000	Longevity of infective juvenile entomopathogenic nematodes. (P.S. Grewal) OSU Competitive Seed Grant, 1997-1998.
1997	\$4,500	Autoclave for Thorne Hall: an Equipment Grant. (P.S. Grewal) OARDC, 1997-1998.
1997	\$15,000	Synergistic interactions between entomopathogenic nematodes and white grubs in turfgrass (P.S. Grewal) Ohio Turfgrass Foundation, 1997-1998.
1996	\$70,000	Development of the first biological control product for plant-parasitic nematodes (E.E. Lewis, M. Raupp & P.S. Grewal), Maryland Industrial Partnerships, 1996-1997.
1993	\$275,000	Genetic enhancement of environmental stability of nematodes for biological control (R. Gaugler, P.S. Grewal, S. Selvan & I. Glazer), BARD, 1993-1996.
1992	\$600,000	Enhanced biological control potential of entomopathogenic nematodes through genetic engineering for temperature tolerance (R. Gaugler, S. Selvan, P.S. Grewal & M. Shamseldeen), USAID, 1992-1995.

G. Publications

1. Books, articles and other published papers (over 12,100 citations; Google Scholar)

a. Book

Grewal, P.S., Ehlers, R.-U, and Shapiro-Ilan, D.I. [Editors]. 2005. *Nematodes as Biocontrol Agents*, CABI Publishing, CAB International, Wallingford, Oxfordshire, UK, 505pp.

b. chapters in edited books [Invited, peer reviewed: 23]

Bal, H.K. & Grewal, P.S. 2017. Entomopathogenic nematodes for management of insect pests of canola and other oilseed crops. In: *Integrated Pest Management of Canola and Other Oilseed Crops* (G.V.P. Reddy Ed.), CABI Publishing, Wallingford, UK, 130-146.

Grewal, P.S. 2012. Entomopathogenic nematodes as tools in integrated pest management. In: *Integrated Pest Management: Principles and Practice* (D.P. Abrol and U. Shankar, Eds.), CABI Publishing, Wallingford, UK, 162-236.

Grewal, P.S. 2012. From IPM to ecosystem management: the case of urban lawn. In: *Integrated Pest Management: Principles and Practice* (D.P. Abrol and U. Shankar, Eds.), CABI Publishing, Wallingford, UK, 450-488.

Jindal, V., Bal, H.K., An, R. & Grewal, P.S. 2012. Developments in the genetic improvement of entomopathogenic nematodes. In: *Biopesticides in Environment and Food Security: Issues and Strategies* (O. Koul, G.S. Dhaliwal, S. Khokhar and R. Singh, Eds). Scientific Publishers, Jodhpur, India, pp.112-141.

Grewal, P.S., Bai, X., Jagdale, G.B. 2011. Longevity and stress tolerance of entomopathogenic nematodes. In: *Molecular and Physiological Basis of Nematodes Survival* (R.N. Perry and D. Wharton, Eds.), CABI Publishing, Wallingford, UK, pp. 157-181.

Goodrich-Blair, H. Clarke, D., Grewal, P.S. & Ciche, T.A. 2009. Methods in investigating nematode-bacterium-insect symbiosis. (S.P. Stock, N. Boemare, J. Vandenberg, and I. Glazer, Eds.), CABI Publishing, Wallingford, UK, pp. 239-269.

Shapiro-Ilan, D.I. & Grewal, P.S. 2008. Entomopathogenic nematodes. In: *Encyclopedia of Entomology* (J. Capinera, Ed.), Second Edition, Springer Science, Leipzig, Germany, pp. 1336-1340.

Grewal, P.S. & Kaya, H.K. 2008. History of the development of nematodes as biocontrol agents. In: *An Anecdotal History of Nematology* (J. M. Webster, K. B. Eriksson & D. G. McNamara, Eds.), Pensoft Publishers, Sofia-Moscow, pp 246-257.

Grewal, P.S. 2007. Mushroom Pests. In: *Field Manual of Techniques in Invertebrate Pathology* (L. Lacey

- and H.K. Kaya, Eds.), Second Edition, Kluwer Academic Publishers, The Netherlands, pp. 457-461.
- Klein, M.G., Grewal, P.S. & Jackson, T.A. 2007. Lawn, Turf and Grassland Pests. In: *Field Manual of Techniques of Invertebrate Pathology* 2nd Edition (L. Lacey and H.K. Kaya, Eds.), Springer, Dordrecht, The Netherlands, pp. 655-675.
- Grewal, P.S., Ehlers, R.-U. & Shapiro-Ilan, D.I. 2005. Critical issues and research needs for expanding the use of nematodes in biocontrol. In: *Nematodes as Biocontrol Agents* (P.S. Grewal, R.-U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 479-489.
- Grewal, P.S. & Peters, A. 2005. Formulation and quality control of entomopathogenic nematodes. In: *Nematodes as Biocontrol Agents* (P.S. Grewal, R.-U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 79-90.
- Grewal, P.S., Koppenhofer, A.M. & Choo, H.Y. 2005. Turfgrass and pasture pests. In: *Nematodes as Biocontrol Agents* (P.S. Grewal, R.-U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 115-146.
- Lewis, E.E. & Grewal, P.S. 2005. Effects of entomopathogenic nematodes on plant-parasitic nematodes. In: *Nematodes as Biocontrol Agents* (P.S. Grewal, R.-U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 349-361.
- Koppenhofer, A.M. & Grewal, P.S. 2005. Interactions with other biological control agents and agrochemicals. In: *Nematodes as Biocontrol Agents* (P.S. Grewal, R.-U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 363-381.
- Wilson, M.J. & Grewal, P. S. 2005. Biology, production, and formulation of slug-parasitic nematodes. In: *Nematodes as Biocontrol Agents* (P. S. Grewal, R. U. Ehlers and D. Shapiro-Ilan, Eds.), CABI Publishing, Wallingford, UK, 421-429.
- Grewal, P.S. 2002. Formulation and Application technology. In: *Entomopathogenic Nematology* (R. Gaugler, Ed.), CABI Publishing, Wallingford, UK, pp. 265-287.
- Grewal, P.S. 2000. Mushroom Pests. In: *Field Manual of Techniques of Invertebrate Pathology* (L. Lacey and H.K. Kaya, Eds.), Kluwer Academic Publishers, The Netherlands, pp. 497-503.
- Klein, M.G., Grewal, P.S. & Jackson, T.A. 2000. Lawn, Turf and Grassland Pests. In: *Field Manual of Techniques of Invertebrate Pathology* (L. Lacey and H.K. Kaya, Eds.), Kluwer Academic Publishers, The Netherlands, pp. 681-706.
- Grewal, P.S. & Georgis, R. 1999. Entomopathogenic nematodes. In: *Biopesticides: Use and Delivery* (Hall, F.R. & J.J. Menn, Eds.), Humana Press, Totowa NJ, pp. 271-299.
- Richardson, P.N. & Grewal, P.S. 1994. Insect parasitic rhabditid nematodes and the soil environment. In: *Ecology and Biology of Soil Organisms* (S.C. Bhandari and Somani, L.L., Eds.), Agrotech Publishing Academy, Udaipur, pp. 106-130.
- Richardson, P.N. & Grewal, P.S. 1993. Nematode pests of glasshouse crops and mushrooms. In: *Plant Parasitic Nematodes in Temperate Agriculture* (K. Evans, D.L. Trudgill & J.M. Webster, Eds.), CAB-International, UK, pp. 501-544.
- Grewal, P.S. 1992. Laboratory techniques for studying insect-parasitic rhabditid nematodes. In: B.K. Dwivedi (Ed.) *Recent Advances in Nematology*, Bioved Research Society, Allahabad, India, pp. 51-61.

c. peer reviewed journal articles [career total = 200, plus 6 in progress]

- Grewal, P.S. & Barthel, S. 2021. Local self-reliance as a planning principle for building community and global resilience (in prep).
- Grewal, P.S. & Elmqvist, T. 2021. Trophic downgrading of the soil food web: A looming crisis (in prep).
- Das, B., McCoy, E.L. & Grewal, P.S. 2021. Can cities become self-reliant in Water? A case study for Cleveland, Ohio. *Cities* (in draft).
- Sharma, K., Wallace, J., O'Brien, E., Sponsoler, D., Randhawa, P., Li, Yang, L., Darrington, C., Hemmerle, J., Yang, X., Cheng, Z., H.K. Bal, Elmqvist & Grewal, P.S. 2021. Do above ground

- anthropogenic alterations in habitat structural complexity and heterogeneity influence belowground biodiversity and soil food web structure: A multi-taxa analysis. *Ecography* (in draft).
- Sharma, K. & Grewal, P.S. 2021. A novel approach to restoring soil food web structural complexity. *PLoS One*. (in draft)
- Cheng, Z., Islam, R.K., & Grewal, P.S. 2021. A new soil health indicator: Integrating soil chemical and biological properties. *Appl. Soil Ecol.* (in draft).
- Yerukala, S., Bernard, E.C., Gwinn, K.D., Butler, D.M., Grewal, P.S. & Ownley, B.H. 2021. Endophyte *Beauveria bassiana* increases galling of tomato roots with *Meloidogyne incognita*. *J. Nematol* 53, 1-16.
- Sengupta, A., Hariharan, J., Grewal, P.S., & Dick, W. A. 2020. Bacterial community dissimilarity in soils is driven by long-term land-use. *Agrosystems, Geosciences and Environ.* 3(1), e20031
- Habteweld, A., Brainard, D., Kravchenko, A., Grewal, P.S., and Melakeberhan, H. 2020. Characterizing nematode communities in carrot fields and their bioindicator role for soil health. *Nematropica* 50, 200-210.
- Hebteweld, A., Brainard, D., Kravchenko, A., Grewal, P.S. & Malakeberhan, H. 2020. Effect of integrated application of plant-based waste-based compost and urea on the soil food web, soil properties, and yield and quality of a processing carrot cultivar. *J. Nematol* 52, 1-17.
- Fang, L., Rice, J.H., Lopes, V., Grewal, P.S., Lebeis, S.L., Hewezi, T. & Staton, M. 2020. Overexpression of strigolactones-associated genes exert fine-tuning selection on soybean rhizosphere bacterial and fungal microbiome. *Phytobiome J.* doi.org/10.1094/PBIOMES-01-20-0003-R.
- Fang, L., Hewezi, T., Lebeis, S.L., Pantalone, V., Grewal, P.S. & Staton, M. 2019. Soil indigenous microbiome and plant genotypes cooperatively modify soyabean rhizosphere microbiome assembly. *BMC Microbiology* (19(1):201.
- Pothula, S.K., Grewal, P.S., Auge, R. M., Saxton, A.M., & Bernard, E.C. 2019. Agricultural intensification and urbanization negatively impact soil nematode richness and abundance: A meta-analysis. *J. Nematol.* 51: doi: 10.21307/jofnem-2019-011.
- Cheng, Z., Malakeberhan, H., Mennan, S., & Grewal, P.S. 2018. Relationship between soyabean cyst nematode *Heterodera glycines* and soil nematode communities under long-term tillage and crop rotation systems. *Nematropica* 48, 101-115.
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- An R., Suri, K.S., Jurat-Fuentes, J. & Grewal P.S. 2017. Dynamic transcriptomic response of *Heliothis virescens* during infection by the entomopathogenic nematode *Heterorhabditis bacteriophora* carrying *Photorhabdus temperata* bacteria. *Insect Molecular Biology* DOI: 10.1111/imb.12321.
- An R., Karthik, N.K. & Grewal P.S. 2017. Evaluation of botanical and chemical products for the control of foliar nematodes *Aphelenchoides fragariae* in floriculture. *Crop Protection* 92,107-113.
- Bal, H., Acosta, N., Cheng, Z., Grewal, P.S. & Hoy, C.W. 2017. Effect of habitat and soil management on dispersal and distribution patterns of entomopathogenic nematodes. *Appl. Soil Ecol.*, 121, 48-59.
- Hariharan, J., Sengupta, A., Grewal, P.S. & Dick, W.A. 2017. Functional predictions of microbial communities in soil as affected by long-term tillage practices. *Agric. Environ. Lett.* 2:170031 doi:10.2134/acl2017.09.0031.
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- An, R., Orellana, D., Phelan, P.L., Cañas, L. & Grewal, P.S. 2016. Entomopathogenic nematodes induce systemic resistance in tomato against *Spodoptera exigua*, *Bemisia tabaci* and *Pseudomonas syringae*. *Biol. Contr.* 93, 24-29.
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- Sharma, K. Cheng, Z. & Grewal, P.S. 2015. Relationship between heavy metal contamination and soil food web health in vacant lots slated for urban agriculture in two post-industrial cities. *Urban Ecosystems* 18, 835-855.
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d. reviews [Invited and peer reviewed; Total published = 12]

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e. papers in proceedings [Total = 17]

- McSpadden Gardener, B., Miller, S., Kleinhenz, M. Doohan, D., Grewal, P.S., and Stinner, D. 2002. Dried and composted dairy manure in vegetable cropping systems: effects on soil and plant health. Proceedings of the 2002 International Symposium on Composting and Compost Utilization, Michel Jr. F., Rynk, R. & Hoitink, H.A.J. (eds.), The JG Press, Inc., Emmaus, PA, Pp. 581-591.
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- Grewal, P.S. 1998. Survival of formulated nematodes. Proceedings of the International Symposium on Ecophysiological survival of entomopathogenic nematodes, Society of Invertebrate Pathology, Sapporo, Japan, pp. 33-35.
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2. Inventions and patents [Total = 7]

- Grewal, P.S., McCoy, E., Dick, W.A. & Yang, H. 2011. Biphasic Bioretention System. U.S. Patent No. 7,967,979.
- Grewal, P.S. Michel, F. & Keener, H. 2007. Compost Pellets. *OSU Invention Disclosure*.
- Grewal, P.S. 2005. Direct application of desiccated entomopathogenic nematodes for biological pest control. *US Patent* No. 6861,063.
- Grewal, P.S. 2004. Entomopathogenic nematodes and methods of their use. *World Patent No.* WO2005104840.
- Grewal, P.S. & Jagdale, G.B. 2001. A novel nematicide for the control of plant-parasitic nematodes. *OSU Invention Disclosure*.
- Grewal, P.S., Grewal, S.K. & Hammond, R.B. 2000. Application of biological and chemical molluscicides to slug-shelters: A novel approach to cost-effective and environmentally-safe slug control. *OSU Invention Disclosure*.
- Lewis, E.E. & Grewal, P.S. 1999. Control of Plant-parasitic nematodes with culture filtrates of *Xenorhabdus* species. U.S. Patent Application Serial No. 06,014,664.

H. Scientific Presentations

a. invited presentations (National and International: Total = 174)

- 2019 Community resilience through local self-reliance. Rotary Club, Brownsville, TX, June 13, 2019.
- 2017 Sustainable food systems & security. Valley Environmental Summit, McAllen, TX, October 6, 2017.
- 2017 Local solutions to grand global challenges. UTRGV HIGH Scholars Program, June 9, 2017.
- 2016 Entomopathogenic nematode dispersal behavior: ambushers, cruisers, sprinters, and more. Annual Meeting of the Entomological Society of America, Orlando, FL, September 25-30, 2016.
- 2016 Sustainable food systems. Valley Environmental Summit, South Padre Island, TX, September 23, 2016.
- 2016 Building self-reliant cities: Thinking globally acting locally. UTRGV HIGH Scholars Program, July 15, 2016.
- 2015 Patterns and processes of soil nematode community and ecosystem services of the soil food web in urban ecosystems. Annual Meeting of the Entomological Society of America, Minneapolis, MN, November 15-18, 2015.
- 2015 Analyzing the resilience of urban soil nematode foodwebs. Annual Meeting of the Entomological Society of America, Minneapolis, MN, November 15-18, 2015. [With Satyendra Pothula]
- 2015 Entomopathogenic nematodes boost plant immunity: A novel approach to plant protection. Annual Meeting of the Entomological Society of America, Minneapolis, MN, November 15-18, 2015. [With Julia Ferguson and Ruisheng An]
- 2015 Endophytic entomopathogenic fungus *Beauveria bassiana*: A tool for comprehensive plant protection. Annual Meeting of the Entomological Society of America, Minneapolis, MN, November 15-18, 2015. [With Shalini Yerukala and Bonnie Ownley]
- 2015 Global food security through urban agriculture. Second International Conference on Agriculture in an Urbanizing Society, Rome, Italy, September 14-17, 2015.
- 2015 Patterns and processes of soil biodiversity in urban soils. 100th Annual Meeting of the Ecological Society of America, Baltimore, MD, August 9-14, 2015.
- 2015 Resilient food systems: Feeding the 9 billion through urban agriculture. Horticulture/Plant, Soil, and Microbial Sciences Departmental Seminar, Michigan State University, East Lansing, MI, April 16, 2015.
- 2015 Entomopathogenic nematodes: A tool in IPM systems. International IPM Symposium, Salt Lake City, Utah, March 24-25, 2015.
- 2015 Building Resilient Urban Food Systems. Global Forum on Innovations in Agriculture, Abu Dhabi, UAE, March

9-10, 2015.

- 2015 Ecosystem services of nematodes: From biocontrol to soil health. Plant Pathology Departmental Seminar, University of Georgia, Athens, Georgia, February 6, 2015.
- 2014 Patterns and processes of nematode biodiversity in urban soils. First Global Soil Biodiversity Conference, Dijon, France, December 2-5, 2014.
- 2014 Building community resilience through localization of food systems. Research Seminar, Heliospectra AB, Gothaburg, Norway, June 27, 2014.
- 2014 Belowground biodiversity and soil foodwebs in urban landscapes. Speed Talk, Stockholm Resilience Center, University of Stockholm, Stockholm, Sweden, June 17, 2014.
- 2014 Entomopathogenic nematodes and bacteria complexes: Symbiosis, virulence, and dispersal. Research Seminar, E-Nema, Schwentinental, Kiel, Germany, June 6, 2014.
- 2014 Drivers for sustainable urban food production: Academic, government and industry partnerships. 2014 Resilient Cities Conference, Bonn, Germany, May 28-31, 2014.
- 2014 Entomopathogenic nematodes and symbiotic bacteria complexes: Symbiosis and Infectivity. Departmental Seminar, University of Copenhagen, Copenhagen, Denmark, May 26, 2014.
- 2014 Resilient Cities. Speed Talk, Stockholm Resilience Center, University of Stockholm, Stockholm, Sweden, May 19, 2014.
- 2014 Implementation of entomopathogenic nematodes in pest management. Sixth International Nematology Congress, Cape Town, South Africa, May 10-14, 2014.
- 2014 Nematodes as model systems: Advancing frontiers of science from ecosystems to molecules. Entomology and Plant Pathology Departmental Seminar, University of Tennessee, Knoxville, TN, January 17, 2014.
- 2013 Ecosystem services of the urban soil food web and implication for urban agriculture. Annual Meeting of the Entomological Society of America, Austin, TX, November 10-14, 2013.
- 2013 Pedagogy and modern teaching methods in biological control. Annual Meeting of the Entomological Society of America, Austin, TX, November 10-14, 2013.
- 2013 Redesigning urban agriculture: lessons from the soil nematode community. Annual Meeting of the Society of Nematologists, Knoxville, TN, July 15-18, 2013.
- 2013 First complete genome sequence of entomopathogenic nematodes goes public. Annual Meeting of the Society of Nematologists, Knoxville, TN, July 15-18, 2013.
- 2013 Moving beyond IPM: building an ecosystem approach to sustainable pest management. Departmental Seminar, The Ohio State University, Wooster, Ohio, January 14, 2013.
- 2012 Ecosystem approaches to sustainable pest management. International Conference on Sustainable Agriculture for Food and Livelihood Security in Commemoration of the 50th Anniversary of the Punjab Agricultural University, Ludhiana, India, November 27-29, 2012.
- 2012 Biodiversity in soil food webs and its ecosystem services. Entomological Society of America, Knoxville, Tennessee, November 11-14, 2012.
- 2012 Urban agriculture, community resilience, and ecological footprint of cities. Public Lecture, Ashland University, Ashland, Ohio, October 11, 2012.
- 2012 Local solutions to grand global challenges. ORIP Lecture, OARDC, Wooster, Ohio, June 22, 2012.
- 2012 Entomopathogenic Nematodes: An attractive tool for biological pest control. International Conference on Plant Biotechnology for Food security: New Frontiers, New Delhi, India, February 21-24, 2012.
- 2012 Entomopathogenic nematodes: Model systems and tools in pest management. Entomology Division Lecture, Indian Agricultural Research Institute, New Delhi, India, February 23, 2012.
- 2011 Urban soil food webs and their ecosystem services. Entomological Society of America, Reno, Nevada, November 13-16, 2011.
- 2011 Cooperative endurance and pathogenesis: A story of the nematode and bacteria partnership. Entomopathogenic Nematodes: Their biology, ecology and application: A tribute to the dynamic career of Harry K. Kaya. Entomological Society of America, Reno, Nevada, November 13-16, 2011.

- 2011 Entomopathogenic nematodes and bacteria as models in fundamental research and pest management, Istanbul, Turkey, September 18-22, 2011.
- 2011 Global issues and local solutions: An ecological approach to urban landscaping. International Workshop on Urban Landscape, Bangkok, Thailand, August 18-29, 2011.
- 2011 Entomopathogenic Nematology since the 1990s: The openings of a new era. Symposium on EPNs as Model Systems in Stress Physiology and Evolutionary Biology at the 50th Annual Meeting of the Society of Nematologists, Corvallis, Oregon, July 17-20, 2011.
- 2011 Entomopathogenic nematode ecological modeling, from frontiers of ecology to the future of agriculture. Symposium on EPNs as Model Systems in Ecology at the 50th Annual Meeting of the Society of Nematologists, Corvallis, Oregon, July 17-20, 2011. [Co-author with Casey W. Hoy]
- 2011 In-vivo gene expression reveals differences in molecular features used by *Xenorhabdus* and *Photorhabdus* for virulence and symbiosis. Symposium on EPNs as Model Systems: Contributions to Symbiosis at the 50th Annual Meeting of the Society of Nematologists, Corvallis, Oregon, July 17-20, 2011. [Co-author with Ruisheng An]
- 2011 Grand global challenges but local solutions: Local self-reliance as an organizing principle for designing sustainable human communities. ORIP Lecture, OARDC, Wooster, Ohio, July 8, 2011.
- 2011 Nematodes as monitoring tools for soil food web development in organic farming systems. Ohio Ecological Food & Farming Association Annual Conference, Granville, Ohio, February, 20, 2011.
- 2011 Local self-reliance as an organizing principle for designing sustainable human communities. Institute Lecture, Indian Agricultural Research Institute, New Delhi, India, January 24, 2011.
- 2011 Entomopathogenic nematodes and their symbiotic bacteria as emerging model systems in biological sciences. Nematology Division Lecture, Indian Agricultural Research Institute, New Delhi, India, January 24, 2011.
- 2011 Towards self-reliant cities: An effective means to reducing ecological foot-print of human population. College Lecture, Government College of Education, Chandigarh, India, January 21, 2011.
- 2010 Urban Landscape Ecology Program: Interdisciplinary approaches to ecological urban landscaping. Environmental Science Graduate Program Seminar, The Ohio State University, Wooster, OH, November 5, 2010.
- 2010 Self-reliant cities. Scholarship for Entrepreneurial Engagement of Program of Ashland University, Hudson High School, Hudson, Ohio, October 30, 2010.
- 2010 Nematode communities and soil food web health in urban landscapes. S-1040 Annual Meeting. Northampton, Massachusetts, October 26-27, 2010.
- 2010 Harnessing the potential of entomopathogenic nematodes to control plant pests. Symposium on Challenges and Perspectives of Plant-parasitic and Beneficial Nematodes in Plant Production at the 70th Annual Meeting of the Northeastern Division of American Phytopathological Society, Northampton, Massachusetts, October 27-29, 2010.
- 2010 Local self-reliance as an organizing principle for city planning. Cleveland City Planning Commission, Cleveland, Ohio, August 18, 2010.
- 2010 Symposium on Expanding Frontiers of Nematology at the 49th Annual Meeting of the Society of Nematologists. Boise, Idaho, July 10-14, 2010.
- 2010 Partnership between entomopathogenic nematodes and their symbiotic bacteria. Symposium on Nematodes and Bacteria Interactions at 49th Annual Meeting of the Society of Nematologists, Boise, Idaho, July 10-14, 2010.
- 2010 A novel biphasic bioretention system for storm water management. Ohio Stormwater Conference, Sandusky, OH, June 10, 2010.
- 2010 Entomopathogenic nematodes and their symbiotic bacteria as emerging model systems. Department of Entomology Seminar, The Ohio State University, Wooster, OH, June 1, 2010.
- 2010 Roundworms: what are they? Circleville High School, Circleville, Ohio, May 18, 2010.
- 2010 Local self-reliance as an organizing principle for addressing global challenges: the role for agricultural

- sciences. Plenary Session Presentation at the Royal Golden Jubilee Congress XI. Jomtien Palm Beach Resort, Pattaya, Chonburi, Thailand, April 1-3, 2010.
- 2010 Molecular mechanisms of symbiosis and virulence of entomopathogenic nematodes and bacteria. Royal Golden Jubilee Congress XI. Jomtien Palm Beach Resort, Pattaya, Chonburi, Thailand, April 1-3, 2010.
- 2010 Entomopathogenic nematodes and bacteria and emerging model systems in biological sciences. Departmental Seminar, Kasertset University, Bangkok, Thailand, March 30, 2010.
- 2010 Local self-reliance and sustainable cities. Department of Biological, Geological, and Environmental Sciences Seminar, Cleveland State University, Cleveland, OH, March 12, 2010.
- 2010 Local self-reliance as an organizing principle for enhancing ecosystem resilience, human well-being, and global stability: the Cleveland ULTRA Experiment. Urban Ecosystems and human well-being: Integrating social and ecological systems Symposium. Minneapolis, Minnesota, January 25, 2010.
- 2010 Research without boundaries: An ecosystem to molecule approach. University Lecture at the Punjab Agricultural University, Ludhiana, India, January 7, 2010.
- 2009 Building an effective organic lawn care program. Ohio Turfgrass Conference, Columbus, Ohio, December 7-10, 2009.
- 2009 Insect resistance management strategies in turfgrass. Entomological Society of America, Indianapolis, Indiana, December 14-18, 2009.
- 2009 Technological needs for building self-reliant cities. Scholarship for Entrepreneurial Engagement of Program of Ashland University, Hudson High School, Hudson, Ohio, October 31, 2009.
- 2009 Soil food webs in urban Ecosystems. Joint Meeting of the Society of Nematologists and the Society of Soil Ecology, Burlington, Vermont, July 12-18, 2009.
- 2009 Molecular mechanisms of virulence and symbiosis in the entomopathogenic nematodes and bacteria. S-1040 Annual Meeting. Pine Mountain, Georgia, October 21-23, 2009.
- 2009 Progress in the research and commercial development of entomopathogenic nematodes. Royal Golden Jubilee Congress X. Jomtien Palm Beach Resort, Pattaya, Chonburi, Thailand, April 3-5, 2009.
- 2008 Grewal, P. S. What is subsoil and how it affects turfgrass management and water quality? 2008 Ohio Turfgrass Conference, Columbus, Ohio, December 8-11, 2008.
- 2008 Ecological lawn care: understanding and manipulating ecological interactions in urban lawns. Crystal Ball Meeting on Sustainability, Professional Landcare Network (PLANET), San Diego, California, November 12-15, 2008.
- 2008 Developing and implementing integrated pest management in commercial lawn care. Entomological Society of America, Reno Nevada, November 15-19, 2008.
- 2008 Expressed genome of the first entomopathogenic nematode. Departmental Seminar, Wooster Area Molecular Biologists Association (WAMBA), October 24, 2008.
- 2008 How do nematodes and bacteria gang-up on insects? Departmental Seminar, Department of Entomology, University of Georgia, Athens, Georgia, September 15, 2008
- 2008 Expressed genome of *Heterorhabditis bacteriophora* reveals interesting longevity and stress tolerance genes in entomopathogenic nematodes. Fifth International Congress of Nematology, Brisbane, Australia, July 12-18, 2008.
- 2008 Metapopulation biology of entomopathogenic nematodes. Fifth International Congress of Nematology, Brisbane, Australia, July 12-18, 2008.
- 2008 Interdisciplinary Research from Molecule to Ecosystem. ORIP Lecture, OARDC, Wooster, Ohio, June 15, 2008.
- 2008 Expressed genome of the entomopathogenic nematode *Heterorhabditis bacteriophora* reveals interesting differences from *Caenorhabditis elegans*. NSF/USDA CSREES Microbial Genome Sequencing Program Awardees Workshop, San Diego, California, January 11-12, 2008.
- 2007 Building an ecosystem management approach to lawn care: understanding a manipulating ecological interactions in urban lawns. Ecological Landscaping: from scientific principles to public practices and

- policies. Cleveland, Ohio, October 28-31, 2007.
- 2007 Lawn revolution and the emergence of urban environmentalism. Ecological Landscaping: from scientific principles to public practices and policies. Cleveland, Ohio, October 28-31, 2007.
- 2007 Expressed genome of the entomopathogenic nematode, *Heterorhabditis bacteriophora*. A workshop on functional genomics in a parasitic model. Plata Delgata, Azores, Portugal, September 19-24, 2007.
- 2007 Virulence of entomopathogenic nematodes and bacteria: gene expression profiles in the white grub host. International Meeting of the Society of Invertebrate Pathology and First Forum on Entomopathogenic Nematodes and the Symbiotic Bacteria. Quebec City, Canada, August 12-16, 2007.
- 2007 Entomopathogenic nematodes for turfgrass pest management: discovery, development and implementation. International Meeting of the Society of Invertebrate Pathology and First Forum on Entomopathogenic Nematodes and the Symbiotic Bacteria. Quebec City, Canada, August 12-16, 2007.
- 2007 Entomopathogenic nematodes: Research and application trends. A keynote speech at the XX Entomology Congress of Venezuela, San Cristobal, Venezuela, July 22-26, 2007
- 2007 Biological control of turfgrass pests. Department of Biology Seminar, Alliance College, Alliance, Ohio, June 5, 2007.
- 2007 Fungal endophytes and cultural practices influence alkaloid levels in turfgrasses. S-1024 Microbial Control and National Turfgrass Entomology Workshop, Wooster, Ohio, March 12-13, 2007.
- 2007 World trends in research and development of biocontrol agents: a key note address. Innovation Fund, Government of South Africa, Johannesburg, South Africa, February 22-23, 2006.
- 2007 Developing application technologies for biocontrol agents: An invitation to engineers. Food Agriculture, and Biological Engineering Department Seminar, Columbus, Ohio, February 16, 2007.
- 2007 An update on the genome sequencing of the entomopathogenic nematode *Heterorhabditis bacteriophora*. NSF/USDA CSREES Microbial Genome Sequencing Program Awardees Workshop, San Diego, California, January 14-15, 2007.
- 2006 The vision and role of the Center for Urban Environment and Economic Development in urban renewal. The Andersons, Maumee, Ohio, December 15, 2006.
- 2006 Power of the science of ecology in improving the predictability of biological pest control with entomopathogenic nematodes. Entomological Society of America, Indianapolis, December 7, 2006.
- 2006 Nematology: an exciting discipline. Plant Pathology Departmental Seminar, The Ohio State University, Wooster, Ohio, October 24, 2006.
- 2006 Virulence of *Moraxella osloensis*, a bacterium associated with the slug-parasitic nematode *Phasmarhabditis hermaphrodita*, to the slug *Deroceras reticulatum*. International Meeting of the Society of Invertebrate Pathology, Wuhan, China, August 27- September 1, 2006.
- 2006 New and upcoming target pests for entomopathogenic nematodes in North America. International Meeting of the Society of Invertebrate Pathology, Wuhan, China, August 27- September 1, 2006 [with Dr. David Shapiro-Illan]
- 2006 Development of novel natural products for the management of urban landscapes. The MTD Corporation, Ohio, July 18, 2006.
- 2006 New research developments on entomopathogenic nematodes. Passo Fundo, Brazil, June 26, 2006.
- 2006 The vision of the Center for Urban Environment and Economic Development for urban renewal. A meeting with Ohio senators, The Ohio State University, Wooster, Ohio, March 27, 2006.
- 2006 Ecosystem approach to urban lawn pest management. National Turfgrass Entomology Workshop, Garner, North Carolina, Feb 19-20, 2006.
- 2006 An update on the genome sequencing of the entomopathogenic nematode *Heterorhabditis bacteriophora*. NSF/USDA CSREES Microbial Genome Sequencing Program Awardees Workshop, San Diego, California, January 15-16, 2006.
- 2005 Building an ecosystem approach to turfgrass management: the final frontier. Entomological Society of America, Ft. Lauderdale, Florida.

- 2005 Entomopathogenic nematodes for pest management in turfgrass and ornamentals. Entomological Society of America, Ft. Lauderdale, Florida.
- 2005 Sequencing the genome of the entomopathogenic nematode *Heterorhabditis bacteriophora*: a foray into the first 1246 expressed sequences. International Meeting of the Society of Invertebrate Pathology, Anchorage, Alaska, August 7-11, 2005.
- 2005 Entomopathogenic nematode biology and evaluation techniques. Midwest institute for biological control techniques for evaluating natural enemies. Arden Shisler Conference Center, Wooster, Ohio, June 12-16, 2005.
- 2005 American lawn and the emergence of urban environmentalism. National Risk Management Research Laboratory, United States Environmental Protection Agency, Cincinnati, Ohio, April 14, 2005.
- 2005 Building an ecosystem approach to lawn management: the final frontier. Annual Meeting of the North Central Branch of the Entomological Society of America, West Lafayette, Indiana, March 20-23, 2005.
- 2005 Behavioral and physiological barriers to host range of entomopathogenic nematodes: A case study on white grubs. Annual Meeting of the North Central Branch of the Entomological Society of America, West Lafayette, Indiana, March 20-23, 2005.
- 2005 Molecule to ecosystem training as a framework for teaching and research in entomology. Entomology Department Seminar, The Ohio State University, Wooster, Ohio, February 8, 2005.
- 2005 Development of novel natural products for the management of urban landscapes. The Scotts Company, Marysville, Ohio, January 4, 2005.
- 2004 Building an ecosystem approach to turfgrass management. Annual Meeting of the Entomological Society of America, Salt Lake City, Utah, November 14-17, 2004.
- 2004 Building an ecosystem approach to lawn management. Urban Landscape Ecology Program, The Ohio State University, Wooster, Ohio, November 12, 2004.
- 2004 Physiology of entomopathogenic nematode cold tolerance. International Meeting of the Society of Invertebrate Pathology, Helsinki, Finland. (August 2004)
- 2004 Infected host's role in infection dynamics of entomopathogenic nematodes. International Meeting of the Society of Invertebrate Pathology, Helsinki, Finland. (August 2004)
- 2003 Ecological genetics. International Workshop on Entomopathogenic Nematodes and Symbiotic Bacteria, Elat, Israel, November 18-20, 2003.
- 2003 Accomplishments and future challenges in the scale-up of entomopathogenic nematodes. International Workshop on Entomopathogenic Nematodes and Symbiotic Bacteria, Elat, Israel, November 18-20, 2003.
- 2003 Metapopulation biology. Third International Symposium on Entomopathogenic Nematodes and Symbiotic Bacteria, The Ohio State University, Wooster, Ohio, September 3-7, 2003.
- 2003 Intra- and inter-specific competition between scarab species: role of niche partitioning and natural enemies. Annual Meeting of the Entomological Society of America, Cincinnati, Ohio, October 25-29, 2003.
- 2003 Making the transition from research to implementation: Scale-up for the production and formulation of entomopathogenic nematodes. Annual Meeting of the Entomological Society of America, Cincinnati, Ohio, October 25-29, 2003.
- 2003 Effect of turf mowing practices on alkaloid production and insect resistance by endophytic grasses. Annual Meeting of the Entomological Society of America, Cincinnati, Ohio, October 25-29, 2003.
- 2003 Opportunities for expanding the use of Entomopathogenic nematodes for turfgrass pest management. Annual Meeting of the Society of Nematologists, Ithaca, New York.
- 2003 Mechanisms of virulence of *Moraxella osloensis* against mollusks: a bacterium associated with slug parasitic nematodes. Annual Meeting of the International Organization of Biological Control, Keil, Germany.
- 2002 Entomopathogenic nematodes: Biological control potential and role in trophic cascades. Entomology Departmental Seminar, University of Kentucky, Lexington, Ky.

- 2002 *Heterorhabditis zealandica*: A new tool for the management of white grubs in turfgrass and nurseries. Formal Conference on Turf and Ornamentals, Entomological Society of America, Ft. Lauderdale, Florida.
- 2002 Evolution of Virulence in Entomopathogenic nematodes: is infectivity correlated with longevity? International Congress of Parasitology, Vancouver, Canada.
- 2002 Thermal adaptation of Entomopathogenic nematode. International Congress of Parasitology, Vancouver, Canada.
- 2002 Ecological Genetics of Entomopathogenic nematodes: Are there metapopulations? Research Trends in Entomopathogenic Nematode Research. International Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil.
- 2002 Production, formulation, and use of entomopathogenic nematodes (co-authored with H. K. Kaya). Current Status of Entomopathogenic Nematodes. International Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil.
- 2002 Non-target effects of entomopathogenic nematodes on the soil nematode community (co-authored with E. A. B. DeNardo). Research Trends in Entomopathogenic Nematology. International Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil.
- 2002 The mechanism of virulence of a slug-parasitic nematode and its associated bacteria to the grey garden slug. (Co-authored with L. Tan). Research Trends in Entomopathogenic Nematology. International Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil.
- 2002 Novel approaches for using entomopathogenic nematodes in urban landscapes. Scotts Company, Marysville, Ohio.
- 2002 Nematology in Throne Hall: Ecosystem to Molecule. Departmental Seminar, Department of Entomology, The Ohio State University, Wooster, Ohio.
- 2001 Milestones in Entomopathogenic Nematology during the Twentieth Century. National Congress on the Centenary of Nematology in India, New Delhi, India.
- 2001 Prospects for Developing Entomopathogenic Nematology in India. A Lecture at the Haryana Agricultural University, Hissar, India.
- 2001 Unraveling Mechanisms of longevity and stress tolerance in *Heterorhabditis bacteriophora*. Third International Meeting on Entomopathogenic Nematodes and bacteria, Madison, Wisconsin.
- 2001 Mass-production of Entomopathogenic Nematodes: Demand, Supply and Quality. SICOBIAL-2001, Sao Paulo, Brazil.
- 2000 Entomopathogenic nematodes: Exploration and use in Brazil. Federal University, Ararars, Brazil.
- 2000 Integrated pest management of scarabs in North America. International symposium on the Management of Scarabs at the 21st International Congress of Entomology, Iguassu Falls, Brazil.
- 2000 Entomopathogenic nematodes: A global journey. EMBRAPA-Cerrados Center, Brazillia, Brazil.
- 2000 Molluscicidal nematodes for the management of slugs. International symposium on entomopathogenic nematodes at the 33rd Meeting of Society of Invertebrate Pathology, Guanajuato, Mexico.
- 2000 Nematicidal effects of entomopathogenic nematodes and their symbiotic bacteria against plant-parasitic nematodes. International symposium on diseases of non-insecta at the 33rd Meeting of Society of Invertebrate Pathology, Guanajuato, Mexico.
- 2000 Molluscicidal Nematodes for slug control on Hostas. Annual Meeting of the Entomological Society of America, Montreal, Canada.
- 2000 Fascinating world of nematodes: associations with plants, insects, and bacteria. Plant Pathology Department Seminar Series, The Ohio State University, Wooster, Ohio.
- 2000 Variation in the virulence of entomopathogenic nematodes to white grubs. National Turfgrass Entomologists Workshop, Geneva, New York.
- 2000 Non-target effects of entomopathogenic nematodes on soil nematodes. Southern Regional Project S-265 Committee Meeting, Orlando, Florida.

- 1999 Anhydrobiosis and storage stability of entomopathogenic nematodes. International meeting on Entomopathogenic Nematodes and their Symbiotic Bacteria. University of Wisconsin, Milwaukee, WI.
- 1999 Biological control: Longevity and environmental stress tolerance of infective juvenile entomopathogenic nematodes. Seminar at USDA Forest Service, Delaware, Ohio.
- 1999 Insect-parasitic Nematodes: Tools for insect pest management - A video presentation. Entomology Department Seminar, The Ohio State University, Columbus, Ohio.
- 1999 A New Insect-parasitic Nematode website. Southern Regional Project S-265 Committee Meeting, Orlando, Florida.
- 1998 Long-term experiences with bioassays for monitoring quality of entomopathogenic nematodes. COST Action 819 Working Group 2 Meeting: Quality of entomopathogenic nematodes, Merelbeke, Belgium.
- 1998 Developments in formulation, storage, and application technology of entomopathogenic nematodes. National Meeting of the Entomological Society of America, Las Vegas, Nevada.
- 1998 Formulations of entomopathogenic nematodes for storage and application. International Symposium on Entomopathogenic Nematodes, Japanese Society of Nematology, Tsukuba, Japan.
- 1998 Survival of formulated nematodes. International Symposium on Ecophysiological survival of entomopathogenic nematodes, Society of Invertebrate Pathology, Sapporo, Japan.
- 1998 Who killed microbial control in turfgrass? August 1998. Microbial Control: Novelty or necessity? International Symposium, Society of Invertebrate Pathology, Sapporo, Japan.
- 1998 First successful inoculative release of an entomopathogenic nematode *Heterorhabditis bacteriophora*. Alternative paradigms for commercializing biological control workshop. New Brunswick, New Jersey.
- 1998 Mechanisms of synergism between entomopathogenic nematodes and Imidacloprid insecticide. S-265 Committee Meeting, Orlando, Florida
- 1998 Potential markets for entomopathogenic nematodes in the USA. MicroBio Ltd., Cambridge, England.
- 1998 Impact of chemical insecticides on the sustainability of entomopathogenic nematodes in turfgrass. National Turfgrass Entomologists Workshop, Dallas, Texas.
- 1997 Entomopathogenic nematodes for pest control in turfgrass: nematode host finding, virulence, and interactions with grass endophytes. Horticulture and Crop Sciences Department, The Ohio State University, Wooster, Ohio.
- 1997 Biological Control of turfgrass pests with nematodes and endophytes. Entomology Department, The Ohio State University, Wooster, Ohio.
- 1997 Biological Control of turfgrass pests with nematodes and endophytes. Department of Entomology, The Ohio State University, Columbus, Ohio.
- 1997 Challenges and opportunities for the commercialization of entomopathogenic nematodes. Bio Integrated Technology, Perugia, Italy
- 1996 Assessing quality of entomopathogenic nematodes. Third International Nematology Congress, Pointe-Pitre, Guadeloupe.
- 1995 Nematode quality. Second International Symposium on Entomopathogenic Nematodes and their Symbiotic Bacteria, Honolulu, Hawaii.
- 1995 Systematics of Steinernematidae and Heterorhabditidae, August 1995, University of California Davis, Davis, California.
- 1994 Fundamental research on entomopathogenic nematodes: An industrial perspective. VIth International Colloquium on Invertebrate Pathology and Microbial Control, Montpellier, France.
- 1994 Predictors of nematode foraging strategy. COST Symposium, Debrecen, Hungary.
- 1993 Entomopathogenic nematode adaptive strategies and their consequences for commercial development, Biosys, Inc., Palo Alto, California.
- 1993 Foraging strategies of entomopathogenic nematodes, University of California Davis, Davis, California.
- 1992 Nematode chemotaxis and host recognition, Rutgers Univ., New Brunswick, New Jersey.

- 1992 Use of entomopathogenic nematodes in mushrooms. Monterey Mushrooms, Watsonville, California.
- 1992 Biological control of mushroom sciarids with nematodes, University of Delaware, Delaware.
- 1992 Biological control potential of entomopathogenic nematodes against white grubs. Grass Breeders Work Planning Conference, Rutgers Univ., New Brunswick, New Jersey.
- 1991 Symbiosis as a key factor in economic control of insect pests with nematodes. Symposium on Symbiosis and Crop Growth, Rank Prize Foundation, Grasmere, Scotland.
- 1990 Saprophagous nematodes in mushrooms, Institute of Horticultural Research, Littlehampton, England.

b. contributed presentations with my students, postdocs and collaborators = total 224

I. Extension and Continuing Education Instruction

- a. invited in-state or out-of-state extension presentations = 75*
- b. extension bulletins: 9*
- c. extension publications: 36*

J. Professional service

1. Editorships or service as a reviewer for journals or other learned publications

Editorial Board, *International Journal of Nematology (UK)*, 1991 - present

Editorial Board, *Annals of Applied Biology (UK)*, 2005 - 2008

Editorial Board, *Biocontrol Science and Technology (UK)*, 2001 - 2006

Editorial Board, *Biological Control (USA)*, 2001-2004

Editor, *Journal of Nematology (USA)*, 1999-2001

Reviewed over 300 papers for 39 journals

2. Professional societies

Hosted the 52nd Annual Meeting of the Society of Nematologists, Knoxville, TN, July 2013

Past President, Society of Nematologists, 2011-2012

President, Society of Nematologists, 2010-2011

President Elect, Society of Nematologists, 2009-2010

Vice President, Society of Nematologists, 2008-2009

Program Chair for the 49th Annual Meeting of the Society of Nematologists, 2010

Society of Nematologists 50th Anniversary Meeting Adhoc Committee Chair, 2008-2011

Chair, 2004-2006; Vice Chair, 2002-2004, Member since 1999, Nematode Division, International Society of Invertebrate Pathology

Chair, 1999-2000; Vice Chair, 1998-1999, Member since 1997, Entomophilic Nematodes Committee, Society of Nematologists

Chair, 2000-2001; Vice Chair, 1999-2000, Member 1998-2001, Industry Committee, Society of Nematologists

Member from 2005- present, Awards Committee, Society of Nematologists

Member, Committee on National Needs and Priorities in Nematology, Society of Nematologists, 1992-1993

Member of the American Association for the Advancement of Science, since 1997

Member of the Entomological Society of America since 1991

Member of the Society of Invertebrate Pathology since 1989

Member of the Society of Nematologists since 1989

Member of the European Society of Nematologists since 1988

Member of the Association of Applied Biologists since 1987

3. Consultation (industry, education, government)

Served on Technical Advisory Board to the Ohio Turfgrass Foundation, 1997-2013

Advised MicroBio Ltd, Cambridge, England on fermentation, formulation, and commercialization of entomopathogenic nematodes, 1997- 2003

Advised SC Johnson Wax on Turfgrass insect pest biology and management, May 1998 - April 1999

Advised Eagle-Picher Minerals Inc., Reno, Nevada on Turfgrass insect pest biology and management approaches, April, 2000- March 2001

Advised Bio Integrated Technology Company, Perugia, Italy on formulations and fermentation of entomopathogenic nematodes, February 1997 to May 1997

4. Other professional/public service

a. grant review panels

Panel Manager, USDA-NRI Integrative Biology of Arthropods and Nematodes, 2006

Panel Member, Fulbright Scholar Regional Panel, 2016

Panel Member, NIFA-Pre-doctoral and Post-doctoral Fellowships Program, 2012

Panel Member, NIFA-Pre-doctoral and Post-doctoral Fellowships Program, 2011

Panel Member, USDA-NRI Integrative Biology of Arthropods and Nematodes, 2005

Panel Member, USDA-NRI Entomology/Nematology Competitive Grants, 2001

Chair, New Enterprise Grants Panel, OARDC Research Enhancement Committee, 1999, 2000

Chair, Matching Grants Panel, OARDC Research Enhancement Committee, 2000

Panel Member, Seed Grants, OARDC Research Enhancement Committee, 2000

Panel Member, Graduate Research Grants, OARDC Research Enhancement Committee, 2000

Panel Member, International Grants, OARDC Research Enhancement Committee, 1999

b. reviewer of competitive grants: reviewed regularly for 8 different agencies

c. regional projects/symposia/sessions

Organized and Chaired the second national conference on "Ecological Landscaping: Enhancing Self-Reliance and Resilience of Cities" in Cleveland, Ohio, December 1-3, 2009. [108 participants]

Organized and Chaired the first national conference on "Ecological Landscaping: From Scientific Principles to Public Practices and Policies" in Cleveland, Ohio, October 28-31, 2007 [105 participants]

Co-Organized and Co-chaired the "First Forum on Entomopathogenic Nematodes and Bacteria" at the 40th Annual Meeting of the Society of Invertebrate Pathology, Quebec City, Canada, August 11-16, 2007 [65 participants]

Chair (2005-2008), Secretary (2003-2005), Member-At-Large (2001-2003), Member (since 1998), Cooperative Southern Regional Project S-1024 (Microbial Control)

Organized and chaired the S-1024 Southern Regional Project Annual Meeting in Wooster, Ohio, 11-12 March 2007 [30 participants]

Organized and chaired the National Turfgrass Entomologists Workshop in Wooster, Ohio, 12-13 March 2007 [75 participants]

Co-Organized and chaired a symposium on "Nematodes and bacteria: from virulence to symbiosis" at the 39th Annual Meeting of the Society of Invertebrate Pathology, Wuhan, China, 15-19 August 2006

Organized and chaired a symposium on the "Genomics of Entomopathogenic Nematodes and their Symbiotic Bacteria" at the 38th Annual Meeting of the Society of Invertebrate Pathology, Anchorage, Alaska, 7-11 August 2005

Organized and chaired a symposium on the "Ecology of Entomopathogenic Nematodes" at the 38th Annual Meeting of the Society of Invertebrate Pathology, Anchorage, Alaska, 7-11 August 2005

Co-organized the "OARDC Annual Research Conference on Bringing Value to the Ecological Paradigm", Wooster, Ohio, April 21, 2005. [105 participants]

Co-organized the "OARDC Annual Research Conference on Bioterrorism and Food Security", Wooster, Ohio, April 29, 2004. [125 participants]

Organized the "Third International Symposium on Entomopathogenic Nematodes and their Symbiotic Bacteria", Wooster, Ohio, September 4-7, 2003. [105 participants from 16 countries]

Co-organized the "OARDC Annual Research Conference on Carbon Sequestration and Global Climate Change: Environmental, Social, and Economic Issues", Columbus, Ohio, April 24, 2003

Organized the "Northeast Ohio Lawn Care Seminar" at the Ohio Agricultural Research and Development Center, Wooster, Ohio, in association with the Ohio Lawn Care Association Annually from 2003-2009 [105 -145 participants]

Co-organized a symposium on the "Research Trends in Entomopathogenic Nematology" at the 35th Annual Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil, 18-23 August 2002

Chaired a contributed paper session at the Annual Meeting of the Society of Invertebrate Pathology, Foz do Iguassu, Brazil, 18-23 August 2002

Organized a symposium on the "Evolution of Parasitism in Nematoda" at the 40th Annual Meeting of the Society of Nematologists, Salt Lake City, Utah, 25 August 2001

Co-chaired the sub-project on Soil Insects of the Cooperative Regional Project S-301 on Microbial Control, 2001- 2004

Co-chaired the Biological Control Session at the National Turfgrass Entomologists Workshop, Geneva, NY, 2000

Chaired a session of Nematode Application at the International Meeting on Entomopathogenic Nematodes and their Symbiotic Bacteria at University of Wisconsin, Milwaukee, 1999

Chaired a session on Quality Evaluation at the COST Action 819 Working Group 2 Meeting on the Quality of Entomopathogenic Nematodes at Merelbeke, Belgium, 1998

Served on the Michigan State Legislature Task Force on the Safety and Efficacy of Entomopathogenic Nematodes in the Human Living Environment, 1995

Co-chaired a symposium on Nematode Chemotaxis at the Third International Nematology Congress, Velthoven, The Netherlands, 1990