UF UNIVERSITY of FLORIDA

Institute of Food and Agricultural Sciences
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Dear Professor Short and the Chair Selection Committee:

I am honored to apply for the position of Chair of the University of Florida Agricultural and Biological Engineering (UF-ABE) Department (Position # 534678). I got my start in this department and am eager see it move forward with strength into the future. As a second-generation UF-ABE graduate, I received my bachelor's and master's degrees from UF-ABE like my father before me. This educational foundation allowed to me earn a Fulbright Student Award to South Africa (1992-1993), an engineering PhD from Cornell University (1998), and my first professorial position at the University of KwaZulu-Natal, South Africa (1996-2002).

After ten years abroad, I returned to the USA and joined the US Army Corps of Engineers (2002-2005) as my final stop before coming home to UF-ABE, eager to share my knowledge from collaborations across the globe. I've enjoyed these past twenty years at UF, attaining tenure and promotion (2011), a second Fulbright Scholarship (2012), Graduate Coordinator (2014), and Full Professor (2017) (55% Research, 35% Teaching and 10% Administration). Since January 2025, I have served as Interim UF-ABE Chair.

I have over four decades of experience with simulation modeling of coupled human-natural systems including rangeland ecosystems, water resources, climate uncertainty as well as decision, risk, and resilience analysis. I have published over 80 peer-reviewed journal articles, two books, and consulted internationally in the use of simulation models for biological system management, decision/resilience analysis. This cover letter summarizes my general leadership philosophy as well as key concepts that I hope to implement within our research, education, and extension missions of UF-IFAS.

Administrative and Management Philosophy: UF-Agricultural and Biological Engineering has been a large, well-functioning department for many years. Currently, UF-ABE is ranked 7th in undergraduate programs and 3rd in graduate programs by the US News & World Report (2024). UF-ABE is over 100 years old, and I have been associated with this department for forty years since 1984. I have enjoyed the mentorship of five UF-ABE Chairs: Gerry Issacs, Direlle Baird, Wendy Graham, Dorota Haman, and Kati Migliaccio. Each of these leaders provided diverse talents to the smooth functioning of UF-ABE with consistency, shared governance, collegiality, and ambitious interdisciplinary vision. I learned from these leaders that our best ideas balance innovation with collaboration. In my experience, the most successful and sustainable ideas are shared, developed, and adapted amongst many minds. As Graduate Coordinator, I was active in helping Dr. Migliaccio implement her ideas as Chair and felt that she

successfully incorporated faculty insights into her management actions. As Chair, I will continue this inclusive leadership and collegiality that allows our faculty to grow and expand their research, teaching and extension portfolios.

Research Vision: UF-ABE has always been a department that pushed the frontiers of biological systems forward and outward while maintaining a strong presence in critical Florida agricultural sectors. This balance allows UF-ABE to chart a separate path from other ABE departments to innovate and respond to rapidly changing societal challenges in our state and world.

Keep our Florida-based agricultural and natural resources research strong, vibrant and adaptive: Near-constant challenges and uncertainties abound in addressing agricultural production in Florida. Within this effort, our UF Research and Education Centers (RECs) play a critical role in research and outreach towards specialized crops, precision production technologies and artificial intelligence (AI). As Chair I will work closely with REC Directors and professors to quickly respond to emerging challenges through multi-disciplinary teams. Because urban Florida continues to grow and expand, traditional land & water engineering issues will also continue to challenge citizens through stormwater management and nonpoint source pollution. Additionally, emerging challenges from micro-plastics, forever chemicals, and salinity increases will challenge water resource engineers. I hope to expand our relationships with the water management districts and bulk water providers through the Center for Land Use Efficiency and the UF Water Institute.

***Expand UF-ABE Research into Novel Biological Systems*:** When I arrived in 2005, UF-ABE had few research projects funded by the NSF, DoD, DARPA, DoE or other federal agencies. These agencies are now regular funders of our research portfolio. Under my leadership, we will continue to expand our research funding portfolio into more diverse areas. Recent UF-ABE projects in critical cyber/infrastructure, resilience, conservation, Smart-Ag, food waste, critical supply chains, and life cycle assessment increase our research funding through interdisciplinary collaborations and charitable funding organizations (Gates and other foundations). As Chair, I will encourage new and established faculty to expand their research portfolios in novel and engaging directions. Focused teams of three to five professors can move with agility to capitalize on these emerging areas.

UF-ABE Global, Active, and Relevant: I left a successful federal research career in part to revitalize my international research portfolio at UF-ABE. I am a strong believer in the power of interdisciplinary research teams. Serving as a research mentor and catalyst for expanded international research has been one of my primary goals after achieving my Full Professor rank. As Chair, I will encourage our newly tenured Associate Professors to pursue international contacts, proposals, and funding proposals. These international activities can bring significant funding and notoriety to UF and are a critical component when promoting to Full Professor which I have experienced firsthand. I was active in both phases of the Livestock Systems Innovation Laboratory (LSIL, $40M over ten

years), Gates Foundation projects, as well as helping to launch the UF Global Food Systems Institute. My LSIL experience and international contacts helped to establish several internationally focused NASA and NSF proposals. As Chair, I will directly support UF-ABE professors and our students to apply for Fulbright Scholarships to fund international research and networking. From 2014 through the present, I have served on the UF Fulbright Committee, and currently its Vice Chair. In this service, I have been instrumental in helping at least five UF faculty and students attain these internationally prestigious awards through direct consultation on their applications. As a result of the UF Fulbright committee's efforts, UF was second in the nation in Fulbright awards in 2024 and is now a repeat "Fulbright Top Producing Institution" (2022-23 and 2023-24).

Teaching Vision: Innovative teaching modalities and methods are key to addressing a rapidly evolving teaching environment that now includes traditional university classes, "hybrid/flipped" formats, as well as online asynchronous options. In my teaching career, I have developed both graduate and undergraduate courses for students enrolled in Agricultural and Biological Engineering, Applied Science, and Agricultural Operations Management degrees. My teaching effort included both traditional lecture formats as well as newer distance education platforms. As an Assistant Professor, I was one of the first in UF-ABE to develop and implement online instruction and still offer core courses in the UFOnline program. As Chair, I will continue to investigate and encourage a diverse portfolio of teaching options for both UF-ABE professors and students. Our UF-ABE student base should expand to successfully include traditional, in-person undergraduate and graduate students, hybrid students at REC's, as well as established professionals working via online programs such as UFOnline or our recently established online master's degree.

Expanded Recruiting through Quest Courses and Undergraduate Research Opportunities: Agricultural and biological engineering is often described as a found major, and we should help students to find UF-ABE with increased participation in the UF Quest program as well as funded programs from the NSF/USDA Research Experience for Undergraduates. These programs have been instrumental in finding some of our highest performing undergraduate and graduate students. All these efforts can work synergistically with our traditional recruiting efforts. With our undergraduate and graduate coordinators, I will review our contact and communication efforts to systematically improve our recruiting and retention efforts.

Ecological Engineering as a New Collaborative Degree Program: With the new ABET curriculum standards established for an ecological engineering bachelor's degree, I plan to co-design and implement a shared engineering program with the HWCoE-Engineering School of Sustainable Infrastructure & Environment (ESSIE). This is an ambitious and long-term project to cooperatively expand our student base to reach a new generation of engineering students to address both Florida and global challenges by applying ecological principles to engineering design, practice, and problem-solving. These principles have been researched and practiced for decades in UF-ABE, and we hope to expand this formally as a collaborative engineering major.

Using resources creatively and efficiently: The reality of most administrative efforts is that they must operate in a limited funding environment. In my experience, there are always options to review and reconfigure current funding in innovative directions. In 2018, we designed and implemented our Pathfinder Fellowship Award as a novel way to utilize UF Graduate School Fellowships to reward innovative faculty/student partnerships in a competitive process. The Pathfinder had the objectives to inspire novel and new multidisciplinary partnerships among UF-ABE professors while recruiting preeminent PhD candidates. To date, our Pathfinder Fellowship has synergistically worked with other UF Seed programs to quickly capitalize on new research trends and partnerships. This program and our excellent UF-ABE faculty efforts have contributed to long-term excellence. As Chair, I hope we can review and reconfigure additional programs and resources to create more win/win options for faculty and students.

Certificates as On-Ramps to a Successful, Global Graduate Program: Under the leadership of Dr. Migliaccio, we established three graduate certificate programs and a new online Master's degree program. As a professor, I have co-chaired our Graduate Certificate in Biological Modeling which has had strong participation and success since its establishment. With our success, we helped to design and implement two new Graduate Certificates (CALS and HWCoE) in SMART Agricultural Technology. Additionally, we designed and implemented a new online, non-Thesis Master's program in ABE which has enrolled its first students. As Chair, I will continue to support and expand these programs as novel and stackable steps to achieving graduate degrees.

Extension Vision: Before my career at UF, I have worked for private industry (Walt Disney World), foreign universities (University of KwaZulu-Natal), and the US federal government (US Army Corps of Engineers). Each of these experiences provided insights into the objectives, values, and pace of different institutions. Through my UF-ABE career, I have interacted with water management districts, international non-governmental organizations, international conservation agencies, and large airports. These outreach experiences can be shared among faculty to form focused and effective extension programs.

Close Collaboration with the UF-ABE Extension Committee: As Interim Chair, I have worked closely with my Extension Coordinator (Dr. Eban Bean) to understand and support our extension mission. In addition, I have visited and met with our UF-ABE faculty at our four RECs (Southwest Florida, Gulf Coast, Indian River, and Tropical) along with their directors to better understand their stakeholders and missions. These meetings have provided me with expanded perspective and insights concerning different cropping systems and regional issues. As chair, I hope to visit all the REC sites to engage the directors to generate directions for increased collaboration.

Active Engagement with our UF-ABE Advisory Board: One of the most important outreach efforts was motivated through our former UF-ABE Chair in her efforts to expand the role of our UF-ABE Advisory Board. These efforts brought useful and timely

insights from practitioners in government institutions and private industry. I will continue these efforts and work to engage our board to adapt our curriculum and research efforts to increase our contribution to private sector initiatives.

Focused engagement with industry leaders and innovators: Innovative extension efforts can arise in many sizes, forms and opportunities. UF-ABE professors and their industry or institutional contacts hold the key for expanded partnerships and outreach. These relationships are almost always built on personal relationships established from successful research or teaching efforts. From 2022 to the present, we have leveraged recent PhD research studying resilience in airport systems with the Vice President of Environment of Dallas-Fort Worth (DFW) Airport. This successful PhD effort has led to the hiring of another UF-ABE PhD, an active internship, and the establishment of a Memorandum of Understanding (MOU) to research critical infrastructure systems. This DFW relationship has led to yet another successful NSF project in 2024 with Ukraine, Poland, Lithuania, and Estonia on critical physical/cyber infrastructure resilience as well as a NATO grant in 2025. As Chair, I hope to empower more of these win/win relationships among UF-ABE faculty and their research partners. We are currently expanding circular biosystems, life cycle analysis, food waste and smart packaging to build original research partnerships among UF-ABE and UF faculty.

In summary, I hope this letter conveys the profound joy and gratitude that I have experienced being a UF-ABE faculty member for over 20 years. Success in any department is built from strong personal relationships of trust, respect, and collaboration. These elements have thrived in UF-ABE over the decades I've studied and worked at Rogers Hall. Being the Chair of this department is an honor and a commitment to continue our shared governance and collaboration to the next generation. We build on a strong foundation of those who have freely given their insights, energy, and mentorship.

Sincerely,

Gregory A. Kiker
Professor and Interim Chair