KANSAS STATE UNIVERSITY | College of Arts and Sciences
Office of the Dean

October 31, 2017

Professor Chuck Martin
Head, Department of Geography
118 Seaton Hall
Manhattan, KS 66506-2900
USA

Dear Professor Martin:

I am enclosing my credentials for consideration for the position of Associate Dean for Research in the College of Arts and Sciences. The ADR position is a cornerstone of the leadership team of our college, with many key responsibilities that promote research, scholarship, creative activity and discovery (RSCAD) among faculty and students. The RSCAD activities of our faculty are vital to our mission as a land grant institution, increasing the value of a K-State education, and creating economic and life-enriching opportunities for our students, our alumni, and our community. I have supported that mission as interim ADR, and I would be truly honored to continue as the permanent ADR.

I joined K-State as an assistant professor of Physics in 2003, and currently hold an Ernest K. and Lillian E. Chapin Chair and the rank of Professor in the Physics Department. I have a strong research publication and funding record, and have mentored graduate and undergraduate students to successful careers. My passion for undergraduate research is underlined by my role as PI for over a decade on the NSF-funded undergraduate research site (REU) in Physics. Furthermore, I have demonstrated leadership at the departmental, collegiate, national and international levels, and broad, interdisciplinary interests. I have been awarded over $7.3 million in external funding as principal investigator. I hold two patents and have recently filed another application, giving insight into the advantages and challenges of creating and licensing intellectual property. As further detailed below, I feel I have the relevant experience to help lead the college in supporting the RSCAD activities of our faculty, students, and staff.

I earned my Ph.D. Degree from the University of Colorado, Boulder in 1999, under the direction of Carl Wieman, investigating novel methods of trapping atoms with laser light and cooling them to nearly absolute zero. After a postdoctoral position at L'Ecole Normale Superieure with Christophe Salomon in ultracold quantum gasses, I joined NIST, Boulder as a National Research Council Postdoctoral Fellow working with a novel method of measuring the frequency of light very precisely, called optical frequency combs. I established this capability at K-State, pushing the frequency comb into the near infrared and using our near-IR combs to create gas-filled hollow fibers useful for measuring optical frequencies of light with moderate accuracy, of interest to industry. As the technology of hollow, "photonic microstructure" fiber matured, novel experiments in other areas became possible. Together with colleagues at the University of Bath and the University of New Mexico, Brian Washburn, our students, and I created a new class of lasers, and have worked to understand and improve their operation, expanding into other wavelengths and higher powers. I have mentored five Ph.D. students who have gone on to excellent jobs in industry, government labs, and postdocs. Anecdotally, undergraduates have used the skills gained in my lab to gain employment or entry into graduate school. I have co-authored over 60 peer-reviewed publications.

I have been awarded over $7.3 million as Principal Investigator (PI) in external funding for research and educational activities. These grants have come from a variety of funding agencies and involved multiple institutions, including international ones. Most recently, an NSF Major Instrumentation project has been funded with a nearly $1.7 million grant from the NSF, with me as PI together with colleagues in agronomy and physics, focused on agro-combs to detect agriculturally relevant gases of use in improving crop production. Through this, I have gained an appreciation of collaborative research, and the various cultures at different funding agencies.

The National Science Foundation has supported an REU site in physics at K-State since 1993, and continuously since I joined as co-PI in 2005, becoming PI in 2008; it funds 12 students each summer, with many more auxiliary participants benefiting as well. Administering this program requires excellent communication with the NSF in funding and reporting, communication with colleagues to help create research projects and effectively pair students with mentors, and understanding and patience in dealing with students new to research. Attention to issues of student diversity in scientific interest, background, and home institution, and other important factors are important for satisfying NSF's mission. Our program has been supported for many years by an ethics course co-taught by Prof. Bruce Glymour and another faculty member in Philosophy, which has strengthened the program and exposed students to a very valuable way of thinking. Furthermore, through a collaboration with Linda Duke and the Beach Museum of Art, we have explored the importance of art in understanding and processing visual information with the REU students. Furthermore, I have recruited for this program at the National Society of Black Physicists. I have also participated in many outreach programs, including Girls Researching Our World, science fairs at local schools, and many other efforts to promote science among a diverse group of young people.

My enclosed CV details a significant a history of leadership at the national level within the American Physical Society (APS) and the Optical Society of America (OSA). I am currently Chair-Elect of the APS Division of Laser Science, founding member of the DLS Carl E. Anderson Outstanding Dissertation Award and former Chair of the Lomb Medal selection committee. Internationally, I have recently co-directed the Optical Frequency Comb Winter School at the International Center for Theoretical Physics in Trieste, Italy (2016), and served as an outside expert on the thesis defense of Dr. Marco Triches in Denmark in 2016.

I have experiences on university-wide committees and with college-wide programs that have helped me develop my understanding of the workings of the university. For example, I have served on the Provost's task force on Dual Career Issues, the Faculty Affairs Committee of the Faculty Senate, and on the Goldwater selection committee. My three-year term on the College Committee on Planning (CCOP), with two years as chair, familiarized me with the process whereby the CCOP advises the Dean on hiring decisions. I have participated in interdisciplinary programs like "writing across the curriculum" in which faculty from across the college spoke of the challenges they encounter in teaching their students to write effectively, and of exploring the similarities and differences between technical and creative writing. Furthermore, I have benefited from many of the programs that were overseen by Beth Montelone as ADR, including a mentoring award, undergraduate research scholarships, and large equipment funds to remodel the sophomore physics laboratory. I have significant experience mentoring junior faculty, largely informally, but also in panels on preparing NSF CAREER proposals on which I have served many times, as a previous NSF CAREER award recipient.

These experiences have helped me assume the responsibility of the interim ADR position. I have learned and accomplished much in my few months as interim ADR, and laid the groundwork for needed developments in the programs administered by the ADR. Since June, with the assistance of many people in the Dean's office and across campus, I have overseen the awarding of undergraduate research scholarships and travel

scholarships, the awarding and spending of the course fee monies of the college, and participated in the Council of ADR's, interacting with Beth Montelone, Associate Vice President for Research and Sponsored Programs (ORSP) and her team in identifying and encouraging groups of faculty to submit concept papers for large collaborative proposals. I have overseen the hire of a Grant Specialist to aid the ADR in assisting faculty in novel grant-writing situations to develop proposals, and fostered relationships with Alumni of our college. I have worked to develop relationships with junior faculty in the college by starting a monthly "Lunch with the ADR", and to assist faculty as they administer new funded research projects. I have assisted the Dean in strategic planning and analysis of college metrics, as well as in negotiating matching funds for grant proposals and other challenges.

If hired, I look forward to continuing to understand and administer the existing programs within the college. Furthermore, I am excited to develop new ways of supporting RSCAD in the college. I am spear-heading an effort to reinvigorate a college-wide safety committee to address health and safety concerns at the request of the Vice Provost of institutional effectiveness. I have met with some department heads to understand their faculty's RSCAD needs, and plan to meet with all the others, if they are willing. In an environment of strained federal funding for research, I will work to create opportunities for collaborative, center-level funding from federal agencies, and strive to assist in matching interested alumni and potential donors to our research programs. I will seek to carry out these duties efficiently and effectively, while remaining inclusive, transparent, responsive and creative as situations arise. I look forward to interacting with all 26 departments and programs in our college, understanding the RSCAD needs of the arts and humanities as well as the STEM fields with which I am most familiar, and looking for ways we as a college can address these needs together.

Thank you for your consideration.

Yours sincerely,

Kristan L. Corwin
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