Summary

UNIVERSITY DISTINGUISHED PROFESSOR

March 22, 2021

The University Distinguished Professorship (UDP) is Virginia Tech's pre-eminent faculty rank bestowed by the Board of Visitors upon members of the university faculty whose scholarly attainments have attracted national and/or international recognition. An extensive nomination and vetting process involves department and college honorifics committees, a specially convened university committee, the executive vice president and provost, and the president.

Following the established protocol, and consistent with the recommendations received from a university committee and the executive vice provost, President Sands recommends the appointment of Drs. France Belanger, Martha Ann Bell, Amy Pruden, and Zhijian (Jake) Tu as University Distinguished professors. All four faculty members are truly exceptional scholars, making exceptional contributions in their fields to the betterment of people and communities around the globe. Their achievements and contributions have garnered national and international recognition. The appointment to University Distinguished Professor also carries with it an annual operating account for use by each professor.

UNIVERSITY DISTINGUISHED PROFESSOR

Dr. France Belanger is currently R. B. Pamplin Professor and Ron & Daisy Byrd Senior Faculty Fellow in the Pamplin College of Business (PCOB) as well as affiliate faculty in the Hume Center for National Security and Technology and in the Center for Gerontology at Virginia Tech.

Appointed in 1997, Dr. Belanger has garnered significant recognition including professorships and fellowships, international research related awards, conference best paper awards, and university research rewards among many others. Her research has had broad impacts for citizens and industry; she is considered a pioneer in the study of digital interactions during the emergence and increasing prominence of the Internet.

Dr. Belanger is an award-winning and passionate instructor, having received the 2001 Teaching Excellence Award in the College of Business and a large number of Thank-a-Teacher and personal communications of gratitude from students. With industriousness, she has taught 139 class sections for 20 different courses in her 24 years at Virginia Tech, maintaining a regular 2:2 (and sometimes 3:1) teaching load since the beginning of her career. Dr. Belanger co-led a study-abroad program on the French Riviera between 2008 and 2013 and taught classes where undergraduate and master's degree students mix in the same section, developing an evaluation mechanism to accommodate this mixed group of students. She consistently receives above average teaching evaluations, even with challenges posed such as large online sections (i.e., MIT) and moving all regular courses online in the spring of 2020 due to the COVID-19 pandemic. She has co-chaired 10 doctoral committees and participated in another four since being receiving tenure until the department stopped accepting Ph.D. students in Information Systems in 2012. She is a proponent of experiential learning and developed several largely technology-based experiential learning activities for her courses, several of which were included in her *Information Systems for Business: An Experiential Approach* book.

Dr. Belanger is a trailblazer in her research in distance-learning and a truly transdisciplinary researcher, with affiliated Faculty positions in the Hume Center for National Security and Technology, the Center for Gerontology, and the Alliance for Social, Political, Ethical, and Cultural Thought Ph.D. program. Her work has evolved from her early research on digital interactions during the internet's early days to understanding the roles of online privacy, digital security, and social interaction. She addresses the privacy of children's information in e-commerce transactions, understands the impact of digital technologies on civilian-government interactions, and examines why individuals do not protect their private information online. She has over 200 publications including journal articles and editorials, seven books, 10 book chapters, 81 refereed conference proceedings, 14 papers published as abstracts, and another 20 published conference workshops, panels, and non-refereed articles. She has received 16 grants for more than $1.3M in research funding from agencies, corporations and institutes, in addition to over $300,000 internally. She has three invention disclosures and one provisional patent. She was keynote speaker at four international conferences and has presented her work worldwide at more than 25 universities. Her book, *Information Systems for Business: An Experiential Approach,* is entering its fourth edition in 2021; editions 2 and 3 have been

used in 65 institutions in 14 countries and has been translated into Greek. Dr. Belanger co-wrote *Evaluation and Implementation of Distance Learning: Technologies, Tools and Techniques,* which is well-reviewed and has over 650 Google citations. She was recognized in July 2020 with the Lifetime Academic Achievement Award by the International Institute for Applied Knowledge Management for her research about the role of knowledge in information privacy and security behaviors; her nomination was supported by top scholars in her field.

Dr. Belanger is an international scholar with numerous internationally-related accomplishments in research, teaching, and service. She has held editorial positions in the leading journals and has been actively involved in executive and program committees for the leading international conferences of her field. She provides international mentoring as a service to her field as well as works on international teams stemming from her fellowships and professorships. Her development of numerous tools for information privacy has led to outreach efforts to enhance citizen knowledge regarding information privacy and security across the globe. She has conducted e-business training to encourage economic development in an economically depressed region. This e-business and e-government work attracted international attention, and she was invited to present to the Ministry of Commerce in South Korea and at various industry events. She has also transformed her privacy research into various presentations for citizens, governments, and industry. Being one of few women in a leadership position in her department, Dr. Belanger is contacted for department, college, and university service frequently. She has been a regular and significant member of committees for recruitment, diversity, promotion and tenure, honorifics, doctoral, strategic, governance, and many other missions.

Dr. Belanger's trajectory is only increasing. She leads with knowledgeable humility, and her impact is seen in the university, industry, country and the world with her outstanding scholarship and research, teaching, and service. She is a model leader and innovator.

RECOMMENDATION:

That Dr. France Belanger be appointed University Distinguished Professor effective April 10, 2021.

March 22, 2021

UNIVERSITY DISTINGUISHED PROFESSOR

Dr. Martha Ann Bell is currently a professor of Psychology and a Faculty Fellow in the College of Science (COS).

Appointed in 1996, Dr. Bell is recognized as an exemplary leader in her department, college, the university, and the world. She is an academic role model, having been awarded for accomplishments across research, teaching, and mentoring of students and early career faculty and has been elected onto executive boards of prestigious psychology associations. Her work as a developmental cognitive neuroscientist examining the psychobiology of function in the developing brain has made her an international expert in brain imaging; she has made major contributions to the understanding of brain maturation and how humans develop the regulation of emotion and higher-order cognition and brain activity. She is a passionate researcher, amassing rigorous evidence and disseminating her findings widely, embodying the land grant mission.

Dr. Bell's exceptional teaching is evident in both the classroom and the research lab. She advocates for integrating discovery and teaching. She receives near-perfect teaching evaluations in all of her courses for both undergraduate and graduate level courses. She has a unique ability to connect with students at many different levels and maintains a safe and comfortable learning environment where students feel free to express ideas and opinions. She has the incredible ability to translate her research into more understandable terms and expertly discuss complex theories. Dr. Bell has been highly involved in cross-disciplinary curriculum development on campus; she helped create the curriculum for the nation's first School of Neuroscience and designed the Developmental Cognitive Neuroscience Course (NEUR 4084) and helped with the design of the Educational Neuroscience course (NEUR 3064). She was a member of the Development, Aging, and Repair curriculum track for the Translational Biology, Medicine and Health (TBMH) graduate program and has given guest lectures for the TBMH gateway course as well as the Development, Aging, and Repair concentration course. Mentoring graduate and undergraduate students Dr. Bell trains the next generation of developmental cognitive neuroscientists; she has mentored 24 graduate students, VT-PREP students, and numerous undergraduate researchers in her lab. She frequently hosts summer research interns in her research lab, and her students regularly present co-authored presentations at national and international conferences and submit their works for publication in high-impact, peer-reviewed journals, winning international awards for their research. Dr. Bell has served on 83 student dissertation committees. She is an ardent advocate for underrepresented students, actively recruiting students to her research team via a variety of diversity and inclusion initiatives and working with Initiative to Maximize Student Development (VTIMSD) and Post-Baccalaureate Research and Education Program (VT-PREP).

Dr. Bell's research impact is reflected by her scientific publications, federal grand funding, and stature in her field. She has 153 highly-cited, peer-reviewed papers and invited book chapters. Her work with infants and children has been funded since 2003 by awards totaling more than $4.75M from the National Institutes of Health (NIH) and the National Science Foundation (NSF).

Dr. Bell's professional service has been immense. She was selected as Chair of the Cognition & Perception grant review panel at NIH (2015-17) and her service on 44 other NIH and NSF panels. She has reviewed for 19 international grant panels. She served as editor of *Infancy*, the leading journal in her area of expertise and co-editor of *Frontiers of Developmental Science,* a prestigious book series. She serves on editorial boards of six international research journals and is ad hoc reviewer for 66 international journals. She is consistently an involved chair or member of departmental, college, and university committees for recruiting, promotion and tenure, governance, administrator reviews, design, research, and more.

Dr. Bell's accomplishments in research, knowledge integration, teaching, and service embody Virginia Tech's mission. Her research provides exceptional insight into the complex interplay among biology, emotion, and cognition in young children. Her continued plans to produce scholarly work show no signs of her slowing down her contributions to the university or to science, making her an ambassador for the University.

<u>RECOMMENDATION</u>

That Dr. Martha Ann Bell be appointed University Distinguished Professor effective April 10, 2021.

March 22, 2021

UNIVERSITY DISTINGUISHED PROFESSOR

Dr. Amy Pruden is currently a W. Thomas Rice professor of Civil and Environmental Engineering in the College of Engineering (COE).

Appointed in 2008, Dr. Amy Pruden is known as an extraordinary faculty member with an impressive array of achievements and a professional trajectory that trends steeply upwards. She demonstrates excellence across the spectrum of Virginia Tech's mission in a way that is unusually well-balanced while she is still somewhat early in her career and gaining momentum.

Dr. Pruden prioritizes teaching and mentoring. She has mentored nine postdoctoral fellows, 33 Ph.D. students, 20 M.S. students, and 44 undergraduates in research in addition to serving on 74 other Ph.D. and M.S. committees. She co-developed *Interdisciplinary Research Transdisciplinary Science (GRAD 5134)*, which is taught to IGEP students to engage them with "the principles of teach science necessary to address grad challenges" and "to resolve conflict, appreciate different personalities/backgrounds, value diversity, work effectively in teams, communicate across disciplines and understand the qualities of effective leadership." She served as associate dean and director of Interdisciplinary Graduate Education for the Virginia Tech Graduate School from 2014-17 and received the VT Outstanding Graduate Student Mentoring Award.

As a hybrid microbiologist/environmental scientist/engineer, she was a pioneer in the application of molecular biological tools for gaining insight into the function of various environmental systems. She recognized antibiotic-resistant bacteria (ARGs) as environmental contaminants and the need to identify, design, and emplace appropriate engineering controls to minimize potential for antibiotic resistance to spread and works to track ARGs in watersheds and other environmental systems and identify appropriate mitigation technologies, illuminating the capabilities of an array of strategies for reducing the potential for antibiotic resistance to spread. She has become among the foremost leaders in fighting disease arising from bacteria that grow in plumbing systems, blowing the whistle on the Flint Water Crisis, leading a team conducting around-the-clock testing of Flint water to ensure that the interventions were effective in making their water safe, as well as launching the US Water Study following the Flint Water Crisis. She has authored more than 160 peer-reviewed journal articles and has been cited nearly 12,000 times. Her current continuing external research grants exceed $6M. For her work in identifying ARGs as "emerging environmental contaminants," she was recognized as an "Emerging Engineering Leader" by the National Academy of Engineering Frontiers of Engineering Symposium and honored by President George W. Bush at the White House with the Presidential Early Career Award in Science and Engineering (PECASE) which is extended to select recipients of the National Science Foundation (NSF) CAREER Award. She, with the Flint Water Study Team, was awarded the Jean and Leslie Douglas Pearl Award. She served on the team to study the concept of using "good" microbes to break down pollutants in the environment following the BP Deepwater Horizon Oil Spill as part of an NSF RAPID grant. She was selected as a College of Engineering faculty fellow in 2010 and received the Deans Award for Excellence in Research in 2015. In 2016, she was named W. Thomas Rice Professor in the College of Engineering. Her impact is also felt beyond Virginia Tech, where she was recognized for her work in receiving the 2014

Paul L. Busch award from the Water Research Foundation, which, "since 2001, recognizes one rising star leader in water innovation each year" and comes with $100,000 in discretionary research funding. She, along with students and postdocs, has presented over 200 posters, talks, and/or proceedings at major conferences, brought in over $26M in external funding from a diverse array of federal and non-federal agencies.

University and professional service span her career, and she is proud to serve, taking the *Ut Prosim* motto to heart and being the inaugural recipient of the Virginia Tech *Ut Prosim* Award in recognition of outstanding service to citizens in need during the Flint Water Crisis. Most recently, she has been working on the group funded to monitor Virginia Tech sewage for SARS-CoV-2: An Early Warning System to Track and Mitigate Potential COVID-19 Outbreaks. She seeks out opportunities to build collaborations across colleges and departments, promoting interdisciplinary training opportunities for students and maximizing value and impact of research to society. She serves as co-PI and research director of a prestigious $3.6M, five-year (2015-2021) NSF PIRE training grant, a grant to build an international network for monitoring ARGs in sewage using shotgun metagenomics sequencing. She was the founding member and first US representative of the Environmental Dimension of Antibiotic Resistance (EDAR) working group and has been active internationally in professional conferences, serving on the organizing committee for the International Water Association (IWA) Leading-Edge Technology (LET) conference in 2016-2019. She has also worked with the IWA to organize educational workshops and was selected as a 2020-2025 IWA Fellow, will help activate their strategic plan, and serves on the organizing committee for IWA's largest event: the biennial World Water Congress. She has many other accomplishments in her still young career. She has delivered 28 invited keynote or plenary talks at national and international conferences/symposia and has been invited for 84 seminars, webinars, and workshops/panel presentations.

Dr. Pruden's contributions to students, Virginia Tech, her profession, science, and society are immeasurable. She is a leader at the top of recruitment efforts but feels that Virginia Tech is her home. Her upward trajectory, passion, and service have no indication of slowing.

RECOMMENDATION

That Dr. Amy Pruden be appointed University Distinguished Professor effective April 10, 2021.

March 22, 2021

UNIVERSITY DISTINGUISHED PROFESSOR

Dr. Jake Tu is currently a professor in biochemistry in the College of Agriculture and Life Sciences (CALS).

Appointed in 1999, Dr Tu rapidly advanced through the ranks to his current position of professor and has become known as an ideal faculty member of the 21st century land-grant university. He is a world-class scholar at the forefront of discovering solutions to address the world's most devastating diseases. He is a role model for faculty and students who aspire to solve complex interdisciplinary research problems that require innovation. He provides effective and valuable leadership to build collaborations, foster development of new research and diverse graduate training programs, and leads Virginia Tech in developing global prominence in vector-borne infectious disease research.

Dr. Tu is a passionate educator and mentor to students. He fosters high-quality education and training experiences for students, including those from groups currently underrepresented in science. He teaches a critical, large majors biochemistry course, and biochemistry students comment on the high quality of his instruction in this demanding course and how he fosters the development of critical thinking and problem solving skills in the classroom. He also team teaches a graduate course taken by most life science graduate students at Virginia Tech which is an introduction to sophisticated concepts to molecular biology and is key to their development as scientists. He has been instrumental in leading an effort to re-invigorate the biochemistry master's program. In his lab, he provides unparalleled training for the graduate students, research scientists, postdoctoral fellows, and undergraduate research students.

Dr. Tu's innovative scholarly work on molecular genetics of mosquitoes takes center stage in the battle against the global health threats posed by known and emerging mosquito-borne diseases. His contributions have ignited the development of population reduction strategies to control diseases such as Malaria, Zika virus, West Nile virus, and Dengue fever by expanding the boundaries of insect biology and genomics. He has built an outstanding research program supported by total extramural support of over $10M. He has been an invited speaker at numerous national and international conferences, presented keynote lectures at international conferences, and was invited speaker at the Cuba-US joint conference on Exploring Opportunities for Arbovirus Research Collaboration in 2016, an effort led by the US National Institutes of Health (NIH) and its Cuban counterpart to foster collaborations in infectious disease. He has served on the organizing committee and chaired sessions of the European Molecular Biology Organization Conference on Molecular & Population Biology of Mosquitoes and Other Disease Vectors, the leading conference in this field; he is now on the organizing committee of the 2021 International Congress of Entomology. He has published 102 refereed journal articles, two edited special issues, and seven book chapters. His publications have received over 10,500 citations, many of which appear in prestigious journals. Dr. Tu gives presentations to engage general public and disseminates information about his research and the general topic of vector-borne infectious diseases through media and news outlets including NPR Science Friday, Forbes, Wall Street Journal, With Good Reason, Pulse of the Planet, and international news organizations. His commitment to Virginia Tech is evident in his departmental, college, and university

level service: on the departmental advisory committee, graduate committee (also serving as chair for 4 years), the departmental promotion & tenure committee (elected as current Chair), the CALS promotion & tenure committee, and the CALS dean's advisory council among many other committees, programs, and task forces.

Dr. Tu has exhibited a strong commitment to professional service throughout his career. He has accepted numerous invitations to serve as a consultant, reviewer, and editor for such organizations as the Food and Agriculture and Organization of the United Nations (FAO) and the International Atomic Energy Agency (IAEA). He is a long-standing panel member of the Vector Biology Study Section of the National Institutes of Health (NIH) and serves as the Editor in Chief of *Insect Molecular Biology,* a highly respected journal in the field of insect science. He is the cornerstone of the Vector-Borne Disease group on Virginia Tech's campus.

Dr. Tu has made substantial, continuous, and impactful contributions to research, service, and teaching at Virginia Tech. His scholarly achievements, especially, put him at the forefront of the international biomedical research community and among the most outstanding faculty at Virginia Tech.

<u>RECOMMENDATION</u>

That Dr. Jake Tu be appointed University Distinguished Professor effective April 10, 2021.

March 22, 2021