Introduction: Hanafusa Memorial Issue

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As scientists, we are asked on a daily basis to multitask. We write grants, manuscripts, and reviews; we develop and oversee budgets; serve on committees; and consult within academia or for industry. We also teach classes, present seminars, produce and grade exams, mentor students, and, yes, we design experiments and do bench research. For better or worse, we know these tasks are not evenly weighted when considering advancement. Many have chosen to focus on large grant portfolios or on organizing national or international research consortia. Fewer have also devoted time to teaching, especially given that a strong teaching portfolio alone is rarely sufficient to advance the career of research scientist. Even fewer have committed their time, or a sufficient portion of it, to one-on-one mentoring of their students—that most difficult role as shaper of the next generation of scientists. Arguably, the job of mentor is the most thankless yet the most important in our field. More than anything else, true mentoring reflects an altruistic devotion to transmit one's love of science as a gift to others, with the caveat that they, too, must pay it forward to their next generation of students.

Those of us who were mentored by Hidesaburo Hanafusa were privileged to have learned from a mentor's mentor. His watershed scientific accomplishments and his strong devotion to collegiality and mentoring have been beautifully encapsulated in recent memorials. As a tribute to Saburo Hanafusa's legacy, his alumni have here endeavored to produce reviews of their research interests. These studies demonstrate Hanafusa's lasting

legacy through the continuing investigation of molecular oncogenic pathways by his students.

Feldman and his colleague Azevedo discuss the emerging impact of induced pluripotent stem cell (iPSC) technology on patient-specific tissue and organ repair, and how elucidation of stem cell biology has produced novel tools to study apoptosis, senescence, and cell cycle progression, eventually leading to new avenues for controlling cancer progression. Davis-Dusenbery and Hata present a comprehensive review of how microRNAs can control cancer progression by either inducing or suppressing the expression of cancer-regulating genes, and conversely, how genomic and epigenomic changes in cancer affect the expression and/or processing of microRNAs. Sudol reviews emerging data on how the newly identified Hippo pathway regulates organ size through mediators such as YAP, TAZ, angiomotins, and SMADs, whose protein-protein interactions are governed by WW domains. Shibuya details the current status of VEGFR research and discusses translational efforts to control tumor growth by targeting this receptor. Foster and colleagues dissect the transitional events in the G1 cell cycle phase that are typically overridden in cancer cells. Specifically, they clarify the subtle but important difference between the classical *restriction point*, normally surpassed by growth factor-induced pathways, and a *cell growth* checkpoint that is likely controlled by a nutrient-sensing mechanism. Sriram and Birge discuss the recent data on the potential role of Crk and CrkL proto-oncogenes as cancer prognostic biomarkers and therapeutic targets.

Mesquita and colleagues focus on tandem BRCT domains, originally identified as cancer-related mutational hotspots in BRCA-encoding genes. Finally, Gelman reviews how SSeCKS/AKAP12, originally identified as a Src-downregulated gene, attenuates oncogenic signaling and cytoskeletal pathways during metastatic progression.

We thank the Editor-in-Chief of *Genes & Cancer*, Premkumar Reddy, for opening his new journal to our initiative. Together with Dr. Reddy, we invite other alumni of Hidesaburo Hanafusa to organize additional sets of reviews for future issues of the journal.

Knowing Saburo's modesty, we are confident that he would have been honored by our "Reviews by Alumni" as a testament to his love of research and mentoring.

—Irwin Gelman and Marius Sudol
Invited Editors

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