RESULTS: This exercise is anticipated to improve trainees' capacity for communications as well as ensure that community stakeholders and research and business community partners have access to, and understanding of, ongoing clinical and translation research with potential commercial applications. Further, the increased ability of our faculty and trainees to effectively communicate complex science to the public and other audiences" including potential funders" supports additional stakeholder dissemination mechanisms by increasing their confidence in their abilities to converse with non-specialists about their research, thus increasing the likelihood of participation in other community-based activities. DISCUSSION/SIGNIFICANCE OF FINDINGS: To increase ITS commercialization efforts, we envision involving numerous external partners to educate, fund, and support new ventures. T1-T4 in 3 judges will include commercialization scholars from regional and national institutions as well as pharmaceutical entities and regional angel investors.

Team Science

00002

Translational Fellows as a mechanism to improve throughput of university technology commercialization

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ABSTRACT IMPACT: This work aims to identify best practices for university-based asset development programs to improve commercialization throughput, which in turn will drive innovation in the biomedical space and directly contribute to improved human health. OBJECTIVES/GOALS: University technology transfer exhibits a high rate of failure, often due to a lack of researcher experience or early-stage financial capital. The LEAP program at Washington University (WUSTL) was created to address these needs. The goal of this study is to assess the performance of LEAP against similar gap funds and further improve program operations. METHODS/STUDY POPULATION: The goals of LEAP are achieved by providing university inventors with individualized consulting and feedback from industry experts, as well as awarding funding to the most promising projects. To determine whether these activities are impactful, we distributed an awardee report form to collect data on all funded LEAP projects, and then combined the results with project registration information. We also collected records Office of Technology Management, including invention disclosures, licenses, and startup creations. The resulting dataset was used to calculate program metrics and then evaluated against comparable gap funds. Sentiment data from participant surveys were also analyzed to assess perceived program value and knowledge transfer. RESULTS/ANTICIPATED RESULTS: As of the Sp2020 cycle, LEAP has funded 76 projects. Resubmitted projects had a funding rate of 52%, vs. 34% for new projects. Of the startups founded off of WUSTL intellectual property since 2016, nearly two-thirds had previously participated in LEAP. Funded LEAP projects also had a 29% licensing rate, which is comparable to similar gap funds. Lastly, participants self-reported an increase in knowledge across a range of commercialization areas. DISCUSSION/SIGNIFICANCE OF FINDINGS: The increased repeat funding rate and self-reported knowledge suggest that LEAP is impactful in building commercialization proficiency. The licensing rate and prevalence of LEAP projects in WUSTL startups also indicate that LEAP is indeed promoting tech transfer. Together, these results suggest that LEAP could be a model for other institutions.

Data Science/Biostatistics/Informatics

Basic Science

16461

Comparison of voxel intensity standardization methods in head and neck cancer magnetic resonance imaging

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ABSTRACT IMPACT: This work will standardize necessary image pre-processing for diagnostic and prognostic clinical workflows dependent on quantitative analysis of conventional magnetic resonance imaging. OBJECTIVES/GOALS: Conventional magnetic resonance imaging (MRI) poses challenges for quantitative analysis due to a lack of uniform inter-scanner voxel intensity values. Head and neck cancer (HNC) applications in particular have not been well investigated. This project aims to systematically evaluate voxel intensity standardization (VIS) methods for HNC MRI. METHODS/STUDY POPULATION: We utilize two separate cohorts of HNC patients, where T2-weighted (T2-w) MRI sequences were acquired before beginning radiotherapy for five patients in each cohort. The first cohort corresponds to patients with images taken at various institutions with a variety of non-uniform acquisition scanners and parameters. The second cohort corresponds to patients from a prospective clinical trial with uniformity in both scanner and acquisition parameters. Regions of interest from a variety of healthy tissues assumed to have minimal interpatient variation were manually contoured for each image and used to compare differences between a variety of VIS methods for each cohort. Towards this end, we implement a new metric for cohort intensity distributional overlap to compare region of interest similarity in a given cohort. RESULTS/ANTICIPATED RESULTS: Using a simple and interpretable metric, we have systematically investigated the effects of various commonly implementable VIS methods on T2-w sequences for two independent cohorts of HNC patients based on region of interest intensity similarity. We demonstrate VIS has a substantial effect on T2-w images where non-uniform acquisition parameters and scanners are utilized. Oppositely, it has a modest to minimal impact on T2-w images generated from the same scanner with the same acquisition parameters. Moreover, with a few notable exceptions, there does not seem to be a clear advantage or disadvantage to using one VIS method over another for T2-w images with non-uniform acquisition parameters. DISCUSSION/SIGNIFICANCE OF FINDINGS: Our results inform which VIS methods should be favored in HNC MRI and may indicate VIS is not a critical factor to consider in circumstances where similar acquisition parameters can be utilized. Moreover, our results can help guide downstream quantitative imaging tasks that may one day be implemented in clinical workflows.

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