

Proposals are evaluated by experts based on scientific merit, feasibility, potential for external funding, and alignment with institutional priorities. Awardees receive targeted funding for building research capacity and facilitating submission of competitive grant applications. Ongoing progress is monitored through periodic reporting to ensure effective use of resources and achievement of defined milestones. Mentorship and training are provided for academic and research development of emerging faculty and investigators. RESULTS/ANTICIPATED RESULTS: Awards represent a strategic institutional investment that empowers researchers to build sustainable research capacity and achieve meaningful scientific impact, without relying solely on external grants. Over 36 awards have been offered, resulting in more than \$1M funds committed to strengthen the institutional research culture. Awards distribution was 12 Mini, 6 Advanced, 2 Laboratory, 2 Special, and 14 MSc Scholars. Most awardees were affiliated to SoM (69%), followed by SoHP (27%). The 50% of HiREC awardees were PhD, followed by MD (30.6%). Awardees showed remarkable progress in their research careers and endeavors, academic promotions, local and national dissemination, publication in peer-reviewed high impact journals, social media, and other mechanisms, and obtaining external funds as R01 level. DISCUSSION/SIGNIFICANCE OF IMPACT: The HiREC Awards focus on early-stage and established investigators to pursue high-quality research and obtain external funding. This support has offered protected research time, access to infrastructure, mentorship, collaborations, and training – key elements in their success and in strengthening our institutional research culture.

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Undergraduate Minor in Research Ecosystems: An intra-institutional strategy for career entry

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OBJECTIVES/GOALS: The research industry continues to struggle with workforce instability: an aging workforce, staff shortages/burn-out, retention/turbulence issues, and attracting qualified staff. We describe an intra-institutional approach at Virginia Commonwealth University to prepare undergraduates for entry-level positions across the research landscape. METHODS/STUDY POPULATION: To address research workforce expansion and job readiness within the institution, the VCU Student Pathways Collaborative was established as an inter-professional collaboration among key research business units. This collaborative effort resulted in the development of the Minor in Research Ecosystems, an academic intervention specifically designed to cultivate qualified entry-level personnel. Consisting of 18 credits, the minor is comprised of four core courses focusing on the competencies in job descriptions for various research ecosystem positions, one elective within the student's chosen research domain, and culminating in an internship experience. The minor is designed to be accessible for all majors fostering diversity, inclusivity, and specialized content knowledge and skill sets. RESULTS/ANTICIPATED RESULTS: The minor, launched in fall 2025, is designed to prepare students for careers that sustain and accelerate the research enterprise. A core goal is bringing awareness to the vast and varied career

paths that research has to offer – paths many students reported they simply did not know existed. In the near future, the minor is expected to support institutional workforce needs, leading to a sustainable, qualified, and skilled workforce by specifically preparing students for the diverse research professional roles that they previously did not know existed. Additionally, early outreach to undergraduate advisors, faculty, and student organizations has revealed significant demand for pathways into research professional careers, a demand that is driving high enrollment projections. DISCUSSION/SIGNIFICANCE OF IMPACT: The undergraduate Minor in Research Ecosystems is designed to meet the growing demand for a workforce capable of navigating the complex and interdisciplinary research landscape. By equipping students with critical knowledge and practical skills, the program ensures graduates are prepared to immediately serve as effective research team members.

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From Mentions to Meaning: Understanding CTSA research citations usage in policy documents

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OBJECTIVES/GOALS: To explore how CTSA-supported research is cited and used in policy documents by applying Yu et al.'s (2023) coding framework. We aim to move beyond citation counts by examining how research engages with policy and identifying substantive examples of research informing policy decisions. METHODS/STUDY POPULATION: We will use Overton to identify CTSA-supported publications with the highest number of policy citations. For these highly cited publications, we will conduct a content analysis of the citing policy documents using Yu et al.'s (2023) motivation codes. These five codes classify how research is used in policy documents – from background context to supporting arguments or forming the policy evidence base – and help distinguish citations that reflect more versus less substantive research-to-policy engagement. We will then analyze coded data with Overton metadata (e.g., citing organization characteristics) to identify emerging patterns and assess whether substantive uses of research provide compelling examples of CTSA impact on policy. RESULTS/ANTICIPATED RESULTS: We will report how CTSA-supported research is used in policy documents. This analysis will identify more meaningful examples of research engagement in policy – publications that inform or shape policy decisions versus those cited for background context. By linking these codes with Overton fields, such as citing organization characteristics, we will explore whether more meaningful uses of research are associated with specific organization types or sectors. Findings will offer preliminary insight into whether analyzing research use in policy documents can help evaluators identify strong examples of CTSA impact. DISCUSSION/SIGNIFICANCE OF IMPACT: This study applies methods from scientometric policy citation

analysis and builds on a growing focus within the CTSA program on research's role in shaping policy. It moves beyond citation counts to identify meaningful cases of CTSA-supported research influencing policy and demonstrating impact.

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Dynamic dashboards to track KL2 scholar trajectories and outcomes

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OBJECTIVES/GOALS: The University of Illinois Chicago's CTSA is developing dynamic dashboards to track K awardee outcomes. Integrating data on grants, publications, and milestones, the dashboard illustrates scholars' research journeys while highlighting the role of the K program in advancing their careers. **METHODS/STUDY POPULATION:** Since 2007, CCTS has supported over 60 KL2 scholars and affiliates. To track scholar outcomes, the evaluation program has developed Power BI dashboards that visualize scholars' career trajectories. These dashboards draw on several sources, including publicly available data, institutional records, and FlightTracker. They highlight key career outcomes such as grant awards and peer-reviewed publications since program entry, providing an overview of scholars' careers while illustrating how they advanced after the program. The dashboards shown continue to evolve. Our current efforts are focused on incorporating impacts from the TSBM and streamlining data collection. **RESULTS/ANTICIPATED RESULTS:** The dashboards provide a comprehensive and interactive view of KL2 scholars' career trajectories, illustrating how the K program contributes to research productivity and career advancement. They reveal trends in grant funding, publications, and other key career milestones over time. The dashboards enable us to more easily identify patterns across cohorts, explore individual scholar achievements, and assess broader program impact. Continued refinement of processes in collecting and displaying data, including AI-supported data collection and incorporation of TSBM outcomes, is expected to ensure a more complete picture of the translational impact of K award support. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The dashboards enhance tracking of K awardees by providing a clear, data-driven view of scholar and affiliate outcomes. They can inform program improvements and highlight broad impacts on career development and translational science. This approach may be adopted by other CTSA hubs.

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Qualitative evaluation to explore barriers and facilitators to implementing a dietary intervention among people living with multiple sclerosis

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OBJECTIVES/GOALS: Multiple sclerosis (MS) is an autoimmune disease located within the central nervous system. Evidence suggests nutrition may affect MS progression, but intervention research remains early. This study aims to identify barriers to dietary

adherence hindering successful translation of dietary interventions into large-scale effectiveness studies. **METHODS/STUDY POPULATION:** We are currently conducting the Functional Outcomes of Diet in Multiple Sclerosis (FOOD for MS) study, a randomized controlled feeding trial testing the efficacy of two diet interventions for improving symptoms of MS. Participants who complete FOOD for MS will be invited to complete an individual interview. We will use a semi-structured interview guide based on the Health Action Process Approach to complete the interviews. Interviews will be recorded via Zoom, transcribed using Microsoft 365 transcription, and thematically analyzed using NVivo Software to derive themes related to diet adherence. **RESULTS/ANTICIPATED RESULTS:** Study findings will describe key themes related to barriers and facilitators of long-term adherence to the FOOD for MS diets. Anticipated barriers may relate to study structure and dietary maintenance, while potential facilitators may involve behavioral supports and study incentives. Participants will also provide recommendations for enhancing the behavioral support components of the intervention to promote sustained adherence. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Results from this qualitative interview will guide refinement to the FOOD for MS protocols and support the development effectiveness and implementation trials.

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Advancing translational science evaluation: Validated sales to assess short- and long-term real-world impacts

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OBJECTIVES/GOALS: Our hub's annual survey evaluates the impacts of our institute's support on investigators' research productivity and real-world impacts. We have piloted new measures to establish valid and reliable approaches to measuring short- and long-term translational science impacts of interest to the CTSA's. **METHODS/STUDY POPULATION:** SC CTSI developed an annual survey to assess our institute's impact on investigators' research productivity, sustained engagement in behaviors of translational scientists, and real-world impacts. In 2023, we piloted two versions of the TSBM 30-elements across four domains. In 2025, we piloted a 20-item hallmarks of a Translational Scientist scale covering collaboration, mindset, capacity building, and planning for D&I and real-world impact. After online administration to over 700 CTSI-supported USC and CHLA-affiliated researchers, data are analyzed using descriptive statistics and exploratory factor analysis, to assess factor structure, item loadings, validity, and reliability. **RESULTS/ANTICIPATED RESULTS:** Prior analyses showed that 27/30 TSBM items aligned well with intended domains, with clinical/medical and policy benefits demonstrating strong internal consistency. Current analyses will establish the psychometric properties of the new Hallmarks of a Translational Scientist scale and sub-domains. Refinement of items and best practices will be shared. Anticipated outcomes include standardized tools for CTSA evaluators to assess short- and long-term translational science impacts. The survey aims