

LRDC Annual Report to Provost May 23, 2022¹

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I. Summary of the Year's Efforts. LRDC aims to be a national leader in learning and educational research and a strong contributor to the broader research, education, and public-facing missions of the University. These aims are realized through LRDC's interdisciplinary faculty and non-faculty researchers, who bring creative, productive, and collaborative research approaches to issues of learning and education. This core mission includes advancing knowledge about the science of learning, responding to the increasing challenges of economic, social, and technical change, and addressing long-standing economic and racial disparities in educational opportunities.

A. Major Strategic Accomplishments

- 1. Working in our new space.** LRDC officially has been in its new location in the Murdoch Building for about a year, although the actual relocation was gradual during 2021. The new space is functioning well as the location of a research center.
- 2. Follow through on Strategic Planning.** Our strategic planning in 2020 included a center-wide SWOTE (Strengths, Weaknesses, Opportunities, Threats, Equity) analysis that identified five general issues to address. The follow-through in 2021 included development of a new LRDC website, new initiatives in increasing the visibility of LRDC research, and the development of an undergraduate distinction in the learning sciences.
- 3. Diversity, Equity, and Inclusion.** LRDC partnered with Psychology and the School of Computing and Education in recruiting two Black women (Daphne Henry, Psychology; Angela Stewart, SCI) to join our faculty next fall. Our Committee on Diversity, Inclusion and Equity (CODIE), volunteers of faculty, staff, and students chaired by faculty and staff co-chairs, ran a series of broad discussions with subcommittees targeted to specific issues. This effort aimed to build racial and cultural competence over the course of 3-5 years, supporting culturally responsive, equitable practices to build trust, belonging, and inclusion. All units (e.g. the Executive Committee, the Administrative Staff) now take this goal as a major factor in making decisions.
- 4. Research priorities.** LRDC research, intrinsic to our core mission, advanced along priority areas in both educational improvement and learning science. High priority areas include the following: (a) basic and applied research on learning in educational domains (mathematics, science, literacy and language learning) and the general cognitive and motivational processes that support learning, studied through behavioral and neuroscience methods; (b) research on social and developmental contexts of learning, including socio-economic and racial factors; (c) high-impact research-practice partnerships that support education improvement across K-12 and into postsecondary education. Some projects aim to improve experiences for students at Pitt, including student access and transition from high school, as well as educational processes at the University, e.g., personalized learning initiatives. We cannot describe the advances in all these areas, so we focus below on c), which we highlighted for progress in our 2021 report. **Research-Practice Partnerships (RPP)** aim to increase the impact of educational improvement through collaborations with practitioners that address practical problems while also producing generalizable knowledge. LRDC has been at the forefront of the RPP movement in educational research in recent years as exemplified in the following:

- a) *Institute for Learning*. The Institute for Learning (IFL; led by Tony Petrosky) and LRDC researchers (Christian Schunn and Jennifer Russell) along with the School of Education's Center for Urban Education collaborated with the Dallas Independent School District to support literacy improvement in 14 secondary schools. These schools serve historically minoritized students, many of whom are English learners. The project generates knowledge about networked strategies for organizing school improvement, supported by a high-profile initiative of the Bill and Melinda Gates Foundation. In addition, the IFL continues to offer online workshops and coaching to school districts around the country.
- b) *The STEM PUSH Network*. The Pathways for Underrepresented Students to HigherEd (PUSH) Network is part of the NSF-funded INCLUDES Alliance. Co-led by Jennifer Iriti with other Pitt colleagues, PUSH has built the first nation-wide networked improvement community of pre-college STEM programs. The project tests innovative ways to increase the number of underrepresented minoritized students who enroll and persist in STEM.
- c) *Ecological Belonging Intervention in high school*. The Ecological Belonging intervention leverages the STEM PUSH Network to adapt, refine, and test an intervention for under-represented students. It is being tested in seven urban areas reaching 2,000 students, with the goal of understanding the education features that support students' sense of belonging in post-secondary education. This project is a collaboration between Kevin Binning & Iriti.
- d) *Local mindfulness intervention partnerships*. Research on mindfulness interventions, led by Brian Galla, engages productive research-practice partnerships with four local school districts (Mt. Lebanon, Avonworth, Chartiers Valley, and Elizabeth Forward) has resulted in numerous intervention studies involving nearly 2,000 high school students.
- e) *Regional climate change partnerships*. LRDC researchers are developing climate change learning networks in rural western Pennsylvania with educators at the Carnegie Museum of Natural History in the Climate and Rural Systems Partnership (CRSP).
- f) *The Just Discipline Project*. LRDC researchers are partnering with five local schools and the school district of Cleveland, Ohio, on school-wide interventions to study school discipline. Through these partnerships, the Just Discipline Project promotes an inclusive and engaging school climate and makes recommendations for equitable school discipline.
- g) *Home learning environments*. The Parents Promoting Early Learning (PPEL) Lab is partnering with Pittsburgh Public Schools, the Allegheny Intermediate Unit, and Holy Family Institute in research to understand how parents help their children learn and develop through everyday activities.
- h) *Leveraging social media for social change*. LRDC researchers are addressing racial and gender biases in social media. In one project, "Preventing Viral Racism on TikTok," Ming-Te Wang and colleagues at CMU, RAND, and Viral Moment study the online transmission of overt and covert racist content within social media. In a related project, "Next Gen Project: Educational Intervention and Web-Based Game for Youth," Wang and colleagues at Pitt, CMU, and UPMC help middle school students understand biases related to race, gender, and ability-based privilege and how to have empathy.

i) *Partnership with Pitt Critical Care Medicine.* Russell and colleagues in Pitt's Critical Care Medicine department are investigating optimal team learning approaches to increase the use of research-based best practices in intensive care units.

5. Research Funding. LRDC's major research strategy is to encourage and support collaborative projects across research areas.

a) **FY2021 and FY2022 to date.** 38 collaborative external grant applications were submitted to 12 different funding agencies in FY22. External funding for FY21 was \$35.8 million and \$42.8 million for FY22 to date. The 5 fiscal-year average is \$36.5 million.

b) **The LRDC Internal Awards Program.** This program, our major strategy for stimulating external collaborative applications, provided funding for three awards. Since its 2009 inception, the internal awards program's investment of \$3.9 million has led to 48 external collaborative proposals, with 23 funded for a total of \$26.3 million.

6. Education Mission. LRDC faculty mentored approximately 100 undergraduates who worked on LRDC research projects under various credit and noncredit arrangements. Our strategic planning led us to propose an LRDC-based Learning Sciences Transcript Distinction for undergraduates. Students will take a pro-seminar specifically designed for this purpose and taught by LRDC faculty in addition to participating in directed study research in LRDC. We expect a soft launch in the winter term of 2022.

7. Communication.

a) *LRDC Website.* In fall 2021, we launched a new LRDC website that reflects the updated mission and vision that resulted from our strategic planning. It provides multiple intersecting views on research, education, equity and inclusion, global and alumni connections, and community engagement in an attractive and easily navigated user interface.
<https://www.lrdc.pitt.edu>.

b) *LRDC Research News.* We launched a new series, *LRDC Research News*, distributed to the University community. Another outcome of our strategic planning, this report is intended to increase the awareness of LRDC research and connections across campus and facilitate connections based on shared interests.

B. Plan for Pitt Objectives

1. Our People

a) **Creating an Inclusive and equitable campus environment.**

(1) **CODIE.** Our Committee on Diversity, Inclusion and Equity (CODIE) expresses the values of inclusion and equity and helps infuse these values across LRDC. It aims to build racial and cultural competence to support culturally responsive, equitable practices over an extended period, 3-5 yrs. In its first year, CODIE attracted the energies of a large number of volunteers—staff, faculty, and students—who created a welcoming environment for open discussions about inclusion and equity. **Progress:** The committee made recommendations (LRDC Director attended meetings) that were implemented. A major one is that all decision making in any LRDC unit considers equity and inclusiveness as a factor. **Evaluation:** A survey to assess perceptions of people in LRDC to be compared with original survey in 2019.

- (2) **Diversity.** We have programs in place to create diversity among graduate students and post-docs (Director's Fellowships). Increasing faculty diversity remains a high priority. **Progress:** Three diversity promoting Director's Fellowships were offered to applicants and existing students this year. Faculty diversity increases this year through successful recruiting of two Black women to joint faculty appointments with SCI and Psychology (Dietrich School). **Evaluation:** Completions of degree and job placements.
 - (3) **Summer Undergraduate Internship Program.** This program is in its 5th year of bringing African-American and Latinx students to the Pitt campus for two months of mentored research in the learning sciences. Last year, the online version of the program, across two sessions in winter and summer, brought in 15 students. **Progress:** The program returns in-person this summer. To bring sustainability and stability to the program, we have appointed as permanent Co-Directors the two faculty (Tokowicz and Nokes-Malach) who have led this program through the last four years. They will apply for external funding for the program. **Evaluation:** Follow-up surveys assess students' experiences in the program and their career plans. Notice of external funding.
 - (4) **The STEM PUSH Network.** STEM PUSH aims to increase participation of minoritized students in pre-college STEM programs. It has built the first national networked improvement community of pre-college STEM programs. The project tests innovative ways to increase the number of underrepresented minoritized students who enroll and persist in STEM. **Progress:** An intervention developed through STEM PUSH - Ecological Belonging Intervention in High School - is now being tested with 2000 under-represented students. **Evaluation:** Report from PUSH team on STEM enrollments and persistence.
 - (5) **Justice Scholar's Institute.** For this School of Education project, LRDC researchers helped to design training that was offered to 300 prospective Pitt students from the Homewood neighborhood to support students' access to post-secondary education. **Evaluation:** Not clear at this time.
- b) Enriching the student experience.**
- (1) **Undergraduate Transcript Distinction in the Learning Sciences.** This initiative offers Pitt undergraduates an educational experience in the learning sciences, combining research with course work, including a pro-seminar taught by LRDC faculty. **Progress:** During the last year, a committee (Lindsay Clare Matsumura and Frits Pil, chairs) led a committee in developing this undergraduate distinction. Recent progress is the development of a syllabus for the Learning Sciences Pro-seminar that will be the main element of the classroom curriculum. **Next steps:** development of administrative structure to handle registration, course listings, etc. The first cohort of students is expected in the Spring term, 2023. **Evaluation:** The enrollment of the first cohort of students and completion of requirements, with minimal administrative headaches.
 - (2) **Undergraduate LRDC mentored research.** About 100 undergraduate students participated in mentored research opportunities as directed study or other for-credit options, or as volunteers, or for pay, both in-person in LRDC and online. **Progress:** Students who enroll in the coming year will be eligible for the Undergraduate Distinction program.
- c) Enhancing the employee experience.**

- (1) **Research Staff.** Our Research Associates (usually funded on a grant of a faculty PI) may secure longer term LRDC positions by applying for grants as PIs. All have annual reviews by the Executive Committee. Post-docs who show longer term interests in working at LRDC can be promoted to Research Associates and encouraged to apply for funding. Both Post-docs and Research Associates receive career support from faculty to help them advance to new positions.
- (2) **Non-research staff.** Staff are provided external learning opportunities. For example, we funded training in a certificate program (Financial Success for Nonprofits) for the IFL's Director of Operations. We have encouraged staff to participate in Faculty and Staff Development Programs (FDSP) offered through the University. Four out of the 10 Fiscal/Admin/IT staff are regular participants in these offerings. We've begun increased training for grants submissions, using zoom recordings as instructional guides for staff that also serve as references during grant applications. Staff are also taking the workshops provided by OSP that are offered each semester.
- d) Updating the physical and operational environment to encourage risk-taking, exploration and collaboration taking, exploration and collaboration.**
 - (1) Our modern, open-area space is conducive to interactions that lead to productive explorations and collaborations.
 - (2) Operationally, LRDC's core strategy has been to create a shared value around collaborative work. This is visible in our internal awards program, our research meetings and presentations, and our faculty meetings. Some projects funded through the internal awards program are exploratory, not fundable by federal agencies without evidence of feasibility.

2. Our Programs

- a) Enhancing graduate and professional offerings.** LRDC provides mentoring and training to PhD students through its partnering departments. Research training occurs in LRDC, which also is a location of graduate classes. LRDC's distinctive cross-discipline and cross-specialty research groups are an important part of the student experience. The excellence of PhDs trained in LRDC is shown in the recognitions they receive and their ability to get good positions in university and nonacademic research settings.
- b) Creating more preeminent (i.e., prior to eminence?) learning, scholarship and research experiences.** LRDC graduate students and post-docs have their Pitt experiences embedded in networks of excellence, centered in their LRDC labs and the curricula established by their home departments. These networks involve our sister university, CMU (e.g. CNBC) as well as departments in the University of Pittsburgh's Dietrich School (especially Psychology), School of Education, School of Medicine, Health and Rehabilitation Sciences, School of Law, Swanson School of Engineering, and Social Work.
- c) Increasing our participation in multidisciplinary, solution-sized research projects.**
 - (1) **Helping students get to college and stay there.**
 - 1. *The College Transition Collaborative (CTC).* CTC is a cross-institution, cross-discipline effort to create and customize belonging-mindset interventions. LRDC researchers Binning and Fotuhi and the University of

Pittsburgh have partnered with the CTC team at Stanford University, studying the social and motivational factors that influence college success. The project, now in its 5th year, included more than 2000 Pitt freshmen as part of a cross-national experiment taking place at 26 other campuses. The program added graduate students last year.

2. *The UBelong collaborative.* This new cross-institution (Pitt, Purdue, UC Irvine), cross-disciplinary (Psychology, Education, Engineering) project is funded by both NSF and IES. It is creating, testing, and improving a new approach to systematically customize belonging-mindset interventions to particular course contexts.
3. *The Pittsburgh Promise.* A project led by Iriti evaluates the effectiveness of the Promise program, which promotes high educational aspirations among urban youth. The project has studied Promise programs across the country and is assessing the impact of local Promise programs on the region's workforce and economy.

(2) Partnering with educators to improve learning

1. *Literacy improvement.* The Institute for Learning (IFL) project led by Petrosky, Schunn, and Russell in collaboration with the School of Education's Center for Urban Education partners with the Dallas Independent School District to support literacy improvement in 14 secondary schools. These schools serve historically minoritized students.
2. *Math improvement.* Russell and the Partners for Network Improvement (PNI) group have led a longitudinal developmental evaluation of a network aimed at making algebra teaching more student-centered, involving 60 high school math teachers in all six New England states for the Nellie Mae Education Foundation (NMEF).
3. *Adolescents' adjustments to school closures.* A large IES-funded project headed by Wang studies how adolescents, especially children from socioeconomically disadvantaged backgrounds, adjusted both academically and socio-emotionally during the COVID-19 school closures.

(3) Large-scale Science

1. *Human brain mapping.* A major big-science project across the U.S. is the Human Connectome Project, launched in 2009 to create a comprehensive map of the brain's billions of neural connections. Walter Schneider and his LRDC team are partnering with Harvard Medical School in this big-science effort by developing a highly accurate model for tracking neural connections that could accelerate progress in building the human brain connectome.
2. *Partnering with the VA for better MRI diagnostics.* Addressing a 40-year-old problem in MRI scanning—the failure to coordinate scan-based diagnoses across different MRI machines—Schneider and his team have developed a cross-machine calibration solution to this problem that will be shared with 119 VA imaging centers across the country through the VA Clinical Health Imaging Portability Standards (CHIPS) project, sponsored by the Department of Defense. This project contributes to the improvement of medical diagnostics.
3. *Advances in COVID-19 Research.* In collaboration with Indian Institute of Technology (IIT) Kanpur, Schneider's group created a fluid dynamic simulation of COVID-19 particles to calculate COVID virus load. Their techniques

were published in *JMRI*, *Neuroimage*, and *Computation Method of Mathematical Imaging*. Additional is the creation of an iOS/Android app to guide and provide recommendations for COVID viral load using remote sensing approach. The app received the “Best Demo Paper Award” at the annual IEEE conference.

d) Broadening our academic opportunities to include more nontraditional students and settings.

1. *Diversity among graduate students.* Research programs have increasingly focused on issues of race and poverty in development and these have the added value of attracting a diverse set of students. In 2021, 22 of 56 students identify as nonwhite or two or more races.
2. *Neighborhood Resilience Project (NRP)* Jamie Hanson contributes to this community project in Pittsburgh's Hill District, working with others to implement Trauma-Informed Community Development, a mission that includes Health and Wellbeing, Opportunity Making, Placemaking, and Engaging Influencers ("HOPE Plans").
3. *Project Destiny.* Hanson is on the Executive Board of this after-school program for school age children.
4. *Home learning environments.* The Parents Promoting Early Learning (PPEL) Lab is partnering with Pittsburgh Public Schools, the Allegheny Intermediate Unit, and Holy Family Institute to study how parents help their children learn and develop through everyday activities. Led by Elizabeth Votruba-Drzal, the project informs programs and policies aimed at reducing income disparities in child achievement and behavior.

e) Expanding opportunities for civic and global engagement.

(1) Regional Civic Engagement

1. *Climate and Rural Systems Partnership (CRSP).* As part of this partnership, Kevin Crowley, Karen Knutson and Mary Ann Steiner are developing climate-change learning networks in rural western Pennsylvania.
2. *Pittsburgh Promise* research led by Iriti has evaluated the effectiveness of the Promise program, which promotes high educational aspirations among urban youth. Iriti and her team have studied Promise programs across the country, evaluating the impact of local Promise programs on a region's workforce and economy.
3. *Food for Thought* (Alimento para el Pensamiento) is a family intervention project led by Diana Leyva with two Pittsburgh Latinx community organizations (Casa San Jose and the Hispanic Development Corporation) to identify volunteer opportunities for students and faculty.
4. *The Kids' Thinking Lab (KiTlab)* led by Melissa Libertus is working with Westmoreland County Community Action Head Start Program on an intervention study to support early math skills for school readiness.
5. *Sarah Heinz House.* Votruba-Drzal consults at this venerable Pittsburgh center where children have fun, learn new skills, and engage in physical health activities. Connections are being established among the executive director Jennifer Cairns, faculty at LRDC, and Pitt's Office of Child Development to strengthen efforts on diversity, equity, and inclusion in their programming.

(2) Engagement in medical communities.

1. Medical training

1. *Emergency Medical Service (EMS)*. A research team led by Research Associate Sandra Katz is collaborating with program directors, instructors, and advanced students at the Center for Emergency Medicine to create a handheld tablet device that will allow small groups of paramedic students to get extra practice.
 2. *Intensive Care*. Russell and colleagues develop optimal team learning approaches to increase the use of research-based best practices in ICUs in the Educational and Organizational Research (METEOR) study.
 3. *Medical Boards*. Scott Fraundorf, Timothy Nokes-Malach, Benjamin Rottman, and graduate student Zachary Caddick are working with American Board of Internal Medicine, American Board of Family Medicine, and American Boards of Medical Specialties to provide an assessment of the new version of medical boards.
2. **Medical research Infrastructure**. LRDC staff manage the Western Pennsylvania Patient Registry (WPPR), a confidential listing of stroke survivors who participate in research. Through the WPPR, researchers study stroke survivors to learn more about preserved and recovered brain functions. An infrastructure project by Schneider's team aims to improve diagnostic capabilities of imaging across 119 VA imaging centers.
- b) **Global engagement**. LRDC has had an international presence over most of its 57-year history. Connections today arise from individual faculty initiatives, occasional institutional agreements, and international visitors.
- (1) International research collaborations**. LRDC faculty have more than 36 active collaborations with researchers outside the US (Australia, Belgium, Canada, China, Colombia, England, Finland, Germany, India, Israel, Netherlands, Norway, Republic of Korea, Spain, Sweden, Switzerland). Current faculty and research associates collaborate with LRDC alumni researchers in cognitive psychology, computer science, machine learning, and cognitive neuroscience from Belgium, Canada, China, France, Israel, the Netherlands, New Zealand, Spain, and Taiwan, to name a few. Examples below:
1. Kevin Ashley is part of an international justice and technology collaboration, serving as Sub-project Chief, Pre-Conflict Decision Tools for Legal Practitioners, Working Group on Conflict Prevention, Autonomy through CyberJustice Technologies Project, University of Montreal. 2018-present.
 2. Binning works with a team of researchers in Europe on a project to understand and reduce anti-Romani prejudice.
 3. Charles Perfetti is part of an international (U.K. and Netherlands) team, the LAsER Consortium (**L**iteracy **A**cceleration through **S**calable **R**esearch), that partners with an on-line educational tech company to study on-line research-based games to support children's reading. He is co-editor on three volumes on reading across languages and writing systems published by Cambridge University Press; the third, *Global variation in literacy development*, is in press.
 4. Melissa Libertus is collaborating with researchers in Israel, Switzerland, Sweden, Italy, and Belgium to examine the development of mathematical thinking in different cultural contexts and in children with known risk factors for math learning disabilities.
- (2) International expertise**. LRDC faculty serve on boards and have consultative roles and recognitions.

1. International appointments:

- Kevin Crowley is an Adjunct Professor of Education, University of Oslo, Norway. His colleague Karen Knutson is an advisor on a cultural mediascapes board at the University of Oslo.
- Diane Litman is a Scholar in Residence at the Stockholm Digital Futures program.
- Charles Perfetti is a Distinguished Chair Professor at Taiwan Normal University.
- Frits Pil is a Fellow of the University of Cambridge, Judge Business School.
- Christian Schunn is an honorary professor at Northeast Normal University, Changchun, China.

2. Other International:

- Conferences Program Committees: Kevin Ashley served for the Jurix (2021) Legal Knowledge and Information Systems Conference, in Vilnius; the Eighteenth International Conference on Artificial Intelligence and Law, ICAIL 2021 in Sao Paulo; and the 2021 International Workshop on Mining and Learning in the Legal Domain. Chris Schunn is Chair of the International Society for Design and Development in Education (ISDDE) and part of an effort to diversify educational design.
- Panels: Diana Leyva reviews for FONDECYT, Chile's equivalent of the NSF. Perfetti serves on the Singapore Ministry of Education's Science of Learning Advisory Panel.
- Dissertations committees: Leyva for a student in the Netherlands; Perfetti for students in Canada and the UK.

(3) Training international scholars. In 2021, LRDC had six international visiting scholars (8 per year average). 16 students from 11 countries were at LRDC (Bangladesh, China, Colombia, Egypt, India, Mexico, Turkey, and Ukraine).

(4) International communications. The *LRDC Research News (section I.A.)* is distributed to more than 150 international scholars.

3. Our Purpose

- a) LRDC's purpose.** From our mission statement. "The Learning Research and Development Center (LRDC) advances the science of learning by bringing together researchers from the cognitive, developmental, social, educational, and computational sciences. We take a highly collaborative and interdisciplinary approach to studying a wide range of types of learning across varied settings. Our research on learning aims to contribute both to a just and equitable society and to building a future where everyone can develop the knowledge, skills, and agency they need to fully participate in society and thrive."
- b) Enhancing the professional trajectories and personal success of our alumni.** LRDC provides strong guidance and mentorship to junior researchers, including graduate students and post-docs, as they move toward careers. Because we are not a degree-granting unit, we invest our own time and resources to try to track graduate students and post-docs as they graduate and move onto other positions. We keep them up-to-date with regular news updates and research

communications. We honor the achievement of our graduate students in distinguished alumni awards. People who leave LRDC with PhDs do well in careers elsewhere, although we have not dedicated the additional human resources needed to track and measure these careers. This is something we may consider.

c) *Fueling economic development throughout the region and economic growth throughout the commonwealth.* LRDC contributes as a home for the research and development of tools and services by innovative researchers. Two prominent examples are *Psychology Software Tools, Inc. (PST)* and *Peerceptive*.

1. *PST was founded by Walter Schneider of LRDC, based on his development of user-friendly software for the design and presentation of computer-interface behavioral experiments. It was incorporated in 1987. It employs more than 30 people in the Pittsburgh area. (CEO is Anthony Zuccolotto).*
2. *Peerceptive grew from 10 years of research at LRDC directed by Chris Schunn on the value of peer-evaluation of writing assignments. Peerceptive is an Ed Tech company focused on improving learning outcomes for students. Located in Pittsburgh (CEO is Mark Linbach), Peerceptive provides online educational services for classrooms around the country. Peerceptive currently employs six people with plans for two more hires.*
3. *In addition to these direct influences, LRDC graduate student and post-doctoral researchers have taken positions in Pittsburgh based companies, including Carnegie Learning, DuoLingo, Resilient Cognitive Solutions, and Pittsburgh offices of Google. This pathway provides skilled LRDC/Pitt human resources that help local companies to thrive.*
4. *Other contributions come from projects that support Pittsburgh communities. Economically and socially healthy communities are critical for the overall health of our region and regional LRDC projects related to the Pittsburgh Promise, the Justice Scholars Initiative working with students in the Homestead community, the Head Start intervention in Westmoreland County, and the Climate and Rural Systems Partnership (CRSP) in rural western PA communities, are contributing to the region.*

d) *Collaborating with communities* to improve outcomes and opportunities for their residents. (See sections 2.d and 2.e for examples of community collaborations).

C. Continual Improvements

1. **Partnership with UCTL.** We continued our partnership with the University Center for Teaching and Learning. With the appointment of UCTL Director Cynthia Golden to LRDC, we made this a more explicit partnership. In past years, we have co-sponsored several learning science post-docs to engage in research related to teaching and learning at the university. This partnership has produced projects that are both helpful to the teaching mission and supportive of the researcher's early career. (We did not bring in a post-doc during these last two years.) We hope to continue this partnership and work with the next UCTL director.
2. **Personnel Changes.** In 2021, two faculty departed for other faculty positions. Two new faculty will join LRDC in the fall. Two recent staff changes: Our grants administrator took a position in the School of Medicine and has been replaced by a person with backgrounds both in research and business, and a PhD in cognitive psychology. We expect this person to provide a

broader set of research funding services to the Center. Another staff member retired without replacement. Her duties have been redistributed.

3. Efforts to extend the reach of LRDC research to wider campus and community audiences. A new research communications channel was created in 2021 to extend the impact of LRDC research on the Pitt campus and beyond. Launched in the fall of 2021, the *LRDC Research News* encapsulates recent research and is distributed every two months. It is distributed to Deans, Directors, faculty in partner units, and the Chancellor's and Provost's administrative teams. The *LRDC Research News* also goes to the approximately 530 alumni and the LRDC Board of Visitors.

4. Efforts to advance diversity, equity, inclusion. In addition to CODIE, we continued our efforts to increase diversity in LRDC at all levels as described above. We have been successful at the graduate student level, where 22 of 56 are nonwhite or two or more races. Three continuing programs for students are important to note:

- a) *Director's Fellowship Program.* This program awards fellowships to minority graduate student applicants and second-year PhD students. Four are offered this year for fall enrollment.
- b) *LRDC Summer Internship Program.* This program, which annually brings in 6-8 undergraduates from under-represented minority backgrounds for a mentored research and personal development program, was canceled for the summer of 2020. We held a make-up online program during the 2021 spring and summer terms. This summer we hold an in-person program.
- c) *Hot Metal Bridge Program.* LRDC continued to support this program, both by funding for a graduate student supervisor and in mentoring of HMB students (one student this year).
- d) *Diversity data.* Overall, 27% of LRDC personnel are nonwhite, a percentage similar to that of the last three years. **See Table 1 of the Appendix**, which includes two Black faculty joining in the fall.

5. Workplace Building and Community.

1. Murdoch Building Relocation: LRDC is now in a newly constructed building across 4 floors of offices, workstations, labs, and conference rooms. The space is attractive and conducive to collaborative work. The number of persons in the building is less than in the former LRDC building, but it is gradually increasing. The Flex Schedule worked well in the view of administrators and staff. Staff morale seems high because of flex schedules. Owl technology has been very useful in supporting hybrid meetings.

2. Departmental Staff Meetings: Beginning in January of 2020, the Administrative and IT groups have held weekly staff meetings. These provide updates that strengthen communication and thus the support of staff services and also allow discussions of problems and their solutions.

3. Cross-Training: The administrative staff are documenting the grant submission process to support our effort to increase capacity to handle this process. Staff will be trained to back up the grants administrator.

D. Recognition (See full list and details in Appendix, Sec. 7).

1. Recognition. Lindsay Page, now Annenberg Associate Professor of Education at Brown University, was ranked 168 out of 200 scholars for shaping educational practice and policy in the "2021 Edu-Scholar Public Influence Rankings" (*Ed Week*,

Jan 2021). **Ming-Te Wang**, Education, received the 2021 Society for Social Work and Research (SSWR) "Excellence in Research Award" (Feb 2021); **Wang** also received the "Distinguished Research Award for Human Development and Learning" from the American Educational Research Association (AERA) (Feb 2021) and was named a top-cited education researcher for 2021 (Dec 2021) by the UK-based Clarivate. **Charles Perfetti** is the #1 cited researcher in the category of "psycholinguistics" and #6 in "reading" according to Google scholar. An LRDC graduate student was the recipient of a National Science Foundation (NSF) Graduate Research Fellowship (**Douglas Getty**). One graduate student received the Dr. Ruth L. Meyers Award for Mentoring Excellence (**Alexandra Silver**). Diane Litman's undergraduate student received the best paper award at the Educational Data Mining 2021 Conference. **Charles Perfetti** was one of four Pitt professors to receive the Provost's Award for Excellence in Doctoral Mentoring, which recognizes outstanding mentoring of graduate students seeking a research doctorate degree.

2. **Media Highlights.** **Brian Galla**, Education, was featured in *Psychology Today* in "How To Help Teens Cut Back on Social Media" (Oct 2021); **Diana Leyva**, Psychology, was featured in *The Conversation* in "How Getting Kids to Make Grocery Lists and Set the Table Can Improve Their Vocabulary and Willingness to Learn" (Nov 2021); **Jennifer Russell**, Education, was quoted in the *Wall Street Journal* "Remote Kindergarten During COVID-19 'Could Impact This Generation of Kids for Their Lifetime" (May 2021);

E. Goals and Strategic Actions for 2021-2022

1. **Integrating new faculty into LRDC.** We will welcome our two new faculty members, setting up space and lab support, as well as mentoring to facilitate their full integration into our community.
2. **Board of Visitors.** Our Board consists of leading researchers across the research areas that are LRDC's focus. This year we added new members to better represent expertise in our more recent research areas. We also added two new members who represent foundations, one local and one national. Our 2023 meeting (the Board meets every two years) will include presentations of new research and a discussion of how we have followed up on the strategic planning we presented at the 2021 meeting.
3. **Institute for Learning.** The IFL is in the process of recruiting a new Executive Director, who will have higher-level duties beyond management that include strategic priorities and organizational leadership, and financial planning and funding cultivation, working with Director Tony Petrosky. The IFL operated this year with a balanced budget. Keeping the IFL on sound financial footing through longer-term shared strategic leadership is a goal we expect to be advanced by this recruiting.
4. **Strengthening graduate student support.** Graduate students are essential in research, and LRDC has always provided some stipend support for graduate students. What is new is a goal to make this funding more predictable so that faculty can accept graduate students before they know whether a grant needed for graduate student support will be funded. We are developing a plan that provides such funding for a limited number (5 or 6) of graduate fellowships each year that are awarded to prospective students of faculty who have concrete plans (e.g. a grant application) to acquire funding.

F. Challenges and Concerns.

- 1. Retention and Rebuilding.** LRDC and its partnering units have been very successful in retaining jointly appointed faculty. However, in 2021 two exceptional people departed, Lindsay Page (Education) and Josefina Banales (Psychology). These losses were a reminder that the excellence of our faculty is apparent to other institutions and that we cannot assume that a strong history of successful retention protects us from losses. (Each of the cases last year involved different circumstances and causes.) We have faced this same challenge again this year, with at least four of our faculty recruited by other institutions. Retention of our talent has become a challenge. The strength of our partnering units as well as our own goes a long way in meeting these challenges. A particularly good outcome this year was the opportunity to recruit with Psychology/Dietrich School on adding Daphne Henry of Boston College to our faculty. This is a result of policy (Targeted External Faculty Recruitment, TEFRR) that is very helpful in effective recruitment. The same path with SCI brought a joint appointment for Angela Stewart, a post-doc at CMU. These new faculty will bring research that builds on our already-substantial research on racial and socio-economic factors in child development and adds to our strong educational technology team a focus on inclusive community-based locations for technology supported learning.
- 2. In-person community.** Many faculty, staff, and graduate students are working in their new spaces in the Murdoch Building. However, the number of people present on a regular basis is not as high as it needs to be, perhaps most noticeably among graduate students. We will work to change that, because in-person work is important for the communities (e.g. graduate student communities) within LRDC. Also, although each staff person is present for 2-3 days per week, many staff have expressed preferences and justifications for continued remote work, especially those who live far away. We will address these issues with increasing expectations for in-person work combined with flexibility and broad input from those affected.

Performance Data. The Table below is updated from the 2021 report to show routine performance data on research productivity, external funding, the internal awards program, and diversity.

Primary Goal / Indicator	Baseline	Current Year	Target	Measurement Period	Trend
Research/External Funding for Research	FY2008 \$17.1 Median of 5-year period FY 2012-2016 \$21.1	FY21 72 grants, \$35.8 million. FY22 to date, 64 grants, \$42.8 million	All faculty to have external funding or active applications	Annual data, 5- and 10-year timelines	Funding non-federal grants increased over the last five years
Research/Research Productivity	2008-2012	2021-2022: Total 121: 114 papers and proceedings, 1 book, 6 book chapters	3-4 pubs per faculty member each year	Annual data averaged over 2017-2021	Yearly variation but overall increases over 10 years

Primary Goal / Indicator	Baseline	Current Year	Target	Measurement Period	Trend
	485 publications over 5-year period				
Research/Impact on Research Fields	2008-2015 Citation data not available	2022: Total citations since 2017 > 108,920; Mean h-index Full Professors = 51.9; median = 51; Assist. and Assoc. Professors = 20.9; median 20.5.	Steady or rising number of total citations, mean h-index, and citations in high impact journals	Annual data averaged over 2015-2022	Overall trend steady
Research/Internal Awards Program	2008 beginning of program	FY2022 4 internal award applications; 3 total awards issued	3-5 internal applications. 50% of awards to lead to external applications	Annual updates to accumulated numbers of applications	From 2008 -2021, 60 applications; 41 funded projects. 48 external applications, 23 of which were funded
Research/Grants Processing	2008 65 applications	FY22 38 grants processed	Approximately 1.5 x number of faculty=48	Annual data, 5- year timelines	Relatively stable since 2013
Research/Collaborative Research Projects (applications and currently funded)	2008-09 6 within LRDC 19 with other units	FY22: 68 Total collaborations, 43 within LRDC, 14 with other Pitt units, 11 with other institutions	10-20 total	Annual data, 5- and 10- year timelines	Trend has been upward over 10 years
Educational Excellence/PhD students in LRDC	2008-09 30 PhD students	61 PhD students	40-60		Trend steady over last few years.

Primary Goal / Indicator	Baseline	Current Year	Target	Measurement Period	Trend
Educational Excellence/Undergraduates in research projects	2008-09 61 undergraduate students	Approximately 100 students	50-100		Growth spurred by more recent Psychology faculty
Embrace the World/International Visiting Scholars	2008-09 8 visiting scholars	5 visiting scholars	10-20 per year	Annual data, 5- and 10-year timelines	Down this year
Embrace the World/International Collaborations	2008-09 8 collaborations	35 international research collaborations	No specific target	Annual data, 5- and 10-year timelines	Upward trend until 2013, steady since
Diversity and Inclusion/Graduate students and postdocs	2008-09 Of 30 PhD students, one African American and one Latinx	See Table 1. of 60 PhD students, 5 African American, 6 Hispanic/Latinx PhD students and 14 Asian/Pacific Islander; Of 11 postdocs, 1 African American, 1 Hispanic/Latinx and 1 Asian/Pacific Islander	~10% from under-represented minority backgrounds	5- and 10-year timelines	Trend has been slightly upward over 10 years and 5 years
Diversity and Inclusion/ Staff	2016 No minorities on core admin and technical staff; 4 among non-PhD research staff	See Table 1. No minority representation among core admin and tech staff; among non-PhD, research staff, 2 Asian/Pacific Islander, 2 Latinx	Next core staff hiring to include minority background applicants in interview set	2016-2022	Some diversity among research staff but not core staff
Diversity and Inclusion/ Support Diversity in learning and educational sciences	2017 Launch of Summer Internship Program	2021: 4 th successive program year, 15 students total (7 students online (spring); 8 students online (summer)	Create funding partnership internally or externally to continue the program	2017-2022	Support from Pitt Seed Program allowed program improvements in 2020

III. Appendix to the LRDC 2022 Report

This Appendix contains Table 1 showing LRDC Demographic Data. In the remainder of the Appendix, we use the six goals established by the previous Plan for Pitt, which we find helpful for organizing specific examples of our activities and achievements. The final section provides information on research achievements and recognitions.

Table 1. LRDC Demographic data, 2021-2022

LRDC Demographics	Graduate Students	Faculty	Post-Doc Associates	Research Associates	IFL Research Associates	Staff	International Visitors
Black/African-American	5	2	1	0	2	1	0
Asian/Pacific Islander	14	1	1	2	0	3	1
Hispanic/Latino	6	2	1	2	1	1	0
White	34	26	8	12	10	37	0
(Two or more races)	1	1	0	0	0	0	0
Not known	1	0	0	0	0	1	0

Goal 1: Advance Educational Excellence

a. *Collaborations on University of Pittsburgh Instruction.*

LRDC-University for Teaching and Learning (UCTL) collaboration. This project includes the study of the outcomes of major course transformations, finding important gains in student outcomes. Our training and presentations are now a

standard part of the UCTL faculty training curriculum, and we are now working to create a video series that invites experts from across the LRDC to share their expertise on topics related to learning and effective pedagogy.

Interventions that Matter (ITM). The ITM project (with funding officially over) continues to produce research findings/publications at the intersection of disciplinary training departments (physics, economics) and psychology. In 2021, ITM had multiple publications related to characterizing the dimensions of learning mindset in physics that advanced psychological theory.

Peerceptiv was used by 68,031 students in the last year, including 2,318 at Pitt.

The UBelong collaborative is a new cross-institution (Pitt, Purdue, UC Irvine), cross-disciplinary (Psychology, Education, Engineering) effort funded by both NSF and IES. It is creating, testing, and improving a new approach to systematically customize belonging-mindset interventions to particular course contexts.

We @ Pitt was created, in a collaboration with LRDC faculty, as a centralized coordinating body to help manage, liaise with, and support parallel efforts to better support student success across the university.

The Fostering Resilience and Engagement in Law Students promotes adaptive mindsets in law students to address their changing social and academic needs.

Performance and persistence support. Provided by some faculty for undergraduate and professional school students.

Other Examples. See also “Provost’s Personalized Education grants” in Section b below; “Partners for Network Improvement (PNI),” “Provost’s Pitt Success Research-Practitioner Advisory Board” and “Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC)” in Section c below; See also “Engage in Research of Impact” in Goal 2 below.

b. Personalizing Educational Experiences

Provost’s Personalized Education grants to LRDC faculty have resulted in the development of the Adaptive Mindsets Toolkit, and the creation of a brief smartphone-delivered mindfulness training to support learning in undergraduate STEM courses.

Graduate students. Personalized experiences are the heart of training for LRDC’s 61 cognitive psychology, social psychology, computer science, intelligent systems program, and School of Education graduate students, who have offices in LRDC, are mentored by faculty, form part of interdisciplinary research teams, and participate in regular lab meetings. In 2021-2022, LRDC graduate students engaged in partnership programs with local universities (CMU), local initiatives (Pittsburgh Promise), local cultural institutions (Carnegie Museum of Natural History), a number of local schools, and worked on international collaborations.

Student Awards. In 2021, graduate students received National Science Foundation (NSF) Graduate Research Fellowships (two); Dr. Ruth L. Meyers Award for Mentoring Excellence (one); University of Pittsburgh Summer Language Institute Fellowship (two).

Mentoring undergraduates. Graduate students also provide mentoring to undergraduates. Graduate students regularly co-author papers with LRDC faculty, some as first authors, present at national and international conferences, and serve as teaching assistants.

Cross-discipline research talks. Students are encouraged to attend talks. LRDC hosts on average 20 talks each year, with nearly all cross-disciplinary in topic or audience with good representation of students. For a number of years, LRDC has been host to the School of Education Committee of Graduate Student in Education (CGSE) research talks.

Professional Development. To provide professional development guidance for students, a number of events were presented by LRDC faculty: “Academic integrity violations in class: Our experiences, our concerns, and what we can do about it” (2021, October); “Advice about applying for an NSF Graduate Research Fellowship” (annually, 2012-2017; 2019-2021). Presentation made to the Hot Metal Bridge (HMB) Fellows and Psychology Department, “Imposter phenomenon” (annually, 2017-2018; spring 2020, summer 2021); “Writing productivity: Creating effective writing habits” (annually, 2016-2021). Career Education and Enhancement for Health Care Research Diversity (CEED) Programs I and II, University of Pittsburgh. Presentations made to the CEED Fellows each year. CEED provides fellows, postdocs, and junior faculty from underrepresented groups with career development in a supportive, collegial environment.

LRDC graduate student council (LRDC-GSC). Student representatives from each discipline in the Center form the GSC to provide students with cross-disciplinary professional development, social opportunities, and representation at Executive Committee and Planning & Budget Committee meetings. The LRDC-GSC created the Graduate Student Council Award (GSCA) and funds two proposals per semester of \$250 each. The GSCA provides funds for graduate students to start a new project, continue work on an existing project, or disseminate findings.

c. Undergraduate Students

Personalized experiences are provided for the approximately 100 undergraduates who participate in LRDC mentored research. This includes students from the Honors College (four), Brackenridge Scholars (one), who are part of more than 15 LRDC faculty labs. Eight students were in a directed research program for credit. Six students participated with funding from the National Science Foundation (NSF), and Research Experience for Undergraduates (REU).

Professional opportunities. Undergrads regularly present research at national and international conferences. Four undergrads received research awards.

Faculty mentoring. Faculty provide mentoring that includes specific programs, research discussions, and reading and discussions of scientific journal articles. Faculty have given talks on subjects requested by students, such as statistical power and factor analysis.

Provost’s Annual Advising and Mentoring Summit. LRDC faculty continue to serve on this Provost committee.

Undergraduate Transcript Distinction in the Learning Sciences. An LRDC faculty committee is developing an undergraduate transcript distinction in the learning sciences.

d. Contributions to University Initiatives

Pitt Success Research-Practitioner Advisory Board. An LRDC faculty member was instrumental in the launching of this cross-university project focused on access, diversity, and inclusion.

Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) project. This project is focused on issues of belonging and equity in large college STEM courses at public universities.

College Transition Collaborative (CTC). LRDC researchers teamed up with researchers at Stanford University to study the social and motivational factors that influence college success. The project, now in its 5th year, included more than 2000 Pitt freshmen as part of a cross-national experiment taking place at 26 other campuses. The study aims to teach students, particularly those who face adversity, how to foster perseverance and engagement during their transition to college.

Pitt Transition Study. This program is a spin-off of the CTC, created at Pitt to include all incoming Pitt students, including graduate students and all colleges, expanding beyond the initial CTC, which was just the College of Arts and Sciences. See also “Engage in Research of Impact” in Goal 2 below.

Goal 2: Engage in Research of Impact

LRDC faculty have led and joined in multiple collaborative proposals funded by IES, which funds intervention projects intended to impact educational practice, and large-scale collaborative NSF projects.

2.1 Impact on research fields

Overall impact of LRDC research on specific research fields is indicated by the high citation rates of our research in high-impact journals, both disciplinary and interdisciplinary.

LRDC publications in learning domains--literacy, science, and math--were highly cited, and each area produced important new research and publications.

2.2 Aspects of research that have distinctive LRDC “added value”

LRDC literacy and math research. Within LRDC, each of these two research areas is now interleaved across multiple levels: their neural bases, behavioral studies of cognitive language and math processes, family and developmental studies of math, instructional intervention studies and large-scale educational improvement of literacy, language learning, and math.

LRDC science learning has been embedded in both informal learning contexts and college classrooms.

Innovative research-practice connections. For example, a McDonnell Foundation study is helping support teachers as they aim to improve their science teaching practice. See also “Research/Impact on Research Fields” in Performance Data Table, Row 3, above.

2.3 Broader social impact

U.S. Department of Education. The Pittsburgh Promise evaluation work led by Jennifer Iriti not only informed Pittsburgh school district policy, but it also included an evaluation framework that is being used by the U.S. Department of Education in its “College Promise Playbook.”

The Community Voices Study is investigating how disadvantage affects socioeconomic status for minority children when compared to their non-minority counterparts.

Climate Change Education. UPCLOSE researchers are developing climate change learning networks in rural western Pennsylvania as part of the Climate and Rural Systems Partnership (CRSP) between scientists and educators at Carnegie Museum of Natural History. CRSP received an Outstanding Environmental Education Award from Pennsylvania Association of Environmental Educators (PAEE). CRSP has presented workshops and talks to other interested networks. Nationally,

UPCLOSE co-lead an NSF-funded center for climate change education working with networks of organizations in three large cities.

Partners for Network Improvement (PNI). This LRDC-based research group supports the critical role that networked communities have in scaling up educational improvement, engaging as developmental evaluators in high-profile educational initiatives funded by NSF, the Bill and Melinda Gates Foundation, and the Nellie Mae Education Foundation.

Effects of policing practices on minoritized groups. Researchers are investigating police stop/contact practices and effects on adolescents of color's academic and psychological adjustment.

Impacts of Covid-19. Ming-Te Wang is examining the unequal impact of COVID-19 on socioeconomically disadvantaged youth and families.

Childhood adversity. Jamie Hanson is studying how childhood adversity may influence brain and behavioral development. Social media. In new work funded by a Pitt-CMU Brain Imaging Data Generation & Education (BRIDGE), Hanson also is studying brain responsivity to social media.

College teaching and learning. The LRDC-UCTL collaboration involves projects that support university teaching on new projects in University of Pittsburgh courses in Chemistry and Economics through the Course Incubator initiative.

Socioeconomic status disparities in early education. Research by Melissa Libertus examines SES differences both in early **mathematical skills and learning opportunities in the home environment.**

Family Income Dynamics (FInD). Elizabeth Votruba-Drzal and Jamie Hanson started the Family Income Dynamics (FInD) study focused on family income dynamics, adolescent perceptions of financial strain, and adolescent development.

Cardiovascular Disease and Diabetes Risk in Adulthood. Elizabeth Votruba-Drzal and colleagues in the Psychology Department have launched the PaTHs study, which considers how the developmental timing of economic circumstances relate to cardiovascular disease and diabetes risk in adulthood. These diseases follow a socioeconomic gradient, with pathogenesis **beginning in childhood.**

Schools and School Districts. A number of LRDC faculty work in local school districts, including work to a) boost motivation and engagement, b) develop digital literacy skills, c) develop digital citizenship skills, d) create professional development materials for teachers of racial minority and socioeconomically disadvantaged students, and e) investigation of police stop/contact practices and effects on adolescents of color's academic and psychological adjustment.

Head Start. LRDC faculty are working with *Westmoreland County Community Action*, the agency that oversees the Head Start classrooms in the county on an intervention study focused on the importance of early math for children's school readiness.

Dallas English Language Arts. This large IFL project funded by The Bill and Melinda Gates Foundation is a partnership with Dallas Independent School District to improve high school outcomes in the English Language Arts by working with 14 schools through a networked improvement community methodology.

Other examples:

1. Brian Galla gave lectures to middle-school teachers on adolescent development, academic achievement, and intervention science.

2. Scott Fraundorf, Timothy Nokes-Malach, Benjamin Rottman, and graduate student Zachary Caddick are working with the American Board of Internal Medicine to provide a theoretical assessment of its new version of medical boards.
3. Benjamin Rottman developed an app that can be used for teaching about statistics: https://research-methods-dojo.shinyapps.io/causalityand_regression/ and also a framework for helping other psychologists create studies online: <https://www.psychcloud.org/>
4. A research team led by Kevin Ashley is developing techniques for succinctly summarizing legal cases for lay users.

Goal 3: Strengthen Communities

3.1 LRDC Alumni Community

A new research communications channel was created in 2021 to extend the impact of LRDC research on campus and beyond. Launched in the fall of 2021, the *LRDC Research News* encapsulates recent research and is created every two months. It is distributed to Deans, Directors, faculty in partner units, and the Chancellor's and Provost's administrative teams. The LRDC Research News also goes to the approximately 530 alumni and the LRDC Board of Visitors. Current faculty and research associates collaborate with LRDC alumni including researchers in cognitive psychology, computer science, machine learning, and cognitive neuroscience from Belgium, Canada, China, France, Israel, the Netherlands, New Zealand, Spain, Taiwan, to name a few. See complete list in "Embrace the World" section. Alumni also receive holiday greetings and occasional communiques on issues relevant to the Center.

3.2 Regional Communities

Pittsburgh Promise Evaluation Group. This work, now in its sixth year, studies college enrollment and persistence in connection with the city of Pittsburgh's program for city high school students. In 2018, it began evaluating the impact of the Promise program on workforce outcomes. In 2019, Promise organizers placed guidance counselors/coaches in three high schools with low Promise participation, following the recommendation of LRDC faculty. This group also developed an evaluation tool for the highly regarded **Summer Dreamers** program (summer learning experience targeting low-achieving and low-income K-8 students) and works with the Best of the Batch Foundation, in Southwestern PA.

Project Destiny and Neighborhood Resilience Project (NRP). Jamie Hanson works with these community groups in Pittsburgh's North Side and Hill District in their efforts to support children and adults.

Climate and Rural Systems Partnership (CRSP). As part of this partnership, a team of researchers, led by UPCLOSE Director Kevin Crowley, with Karen Knutson and Mary Ann Steiner are developing climate change learning networks in rural western Pennsylvania.

Food for Thought (Alimento para el Pensamiento) is a family intervention project led by Diana Leyva with two Pittsburgh organizations working with Latinx community organizations (Casa San Jose and the Hispanic Development Corporation) to identify opportunities for students and faculty to volunteer. Leyva is also providing support to Casa San Jose to organize summer camp activities.

The Kids' Thinking Lab (KiTlab) led by Melissa Libertus is working with Westmoreland County Community Action Head Start Program on an intervention study focused on the importance of early math for children's school readiness.

Sarah Heinz House. Votruba-Drzal consults at this venerable Pittsburgh center where children have fun, learn new skills, and engage in physical health activities. Connections are being established among the executive director Jennifer Cairns, faculty at LRDC, and Pitt's Office of Child Development to strengthen their focus on diversity, equity, and inclusion in their child programming.

Medical training

a. Emergency Medical Service (EMS). A research team led by Sandra Katz is collaborating with program directors, instructors, and advanced students at the Center for Emergency Medicine to create a handheld tablet device that will allow small groups of paramedic students to get extra practice.

b. Intensive Care. Jennifer Russell and colleagues develop optimal team learning approaches to increase the use of research-based best practices in intensive care units in the Educational and Organizational Research (METEOR) study.

c. Medical Boards. Scott Fraundorf, Timothy Nokes-Malach, Benjamin Rottman, and graduate student Zachary Caddick are working with American Board of Internal Medicine, American Board of Family Medicine, and American Boards of Medical Specialties to provide an assessment of the new version of medical boards.

d. Medical Research Infrastructure. LRDC staff manage the Western Pennsylvania Patient Registry (WPPR), a confidential listing of stroke survivors who are interested in participating in research. By collecting information in the WPPR, researchers hope to involve more stroke survivors in studies to help learn more about stroke and the brain. To improve diagnostic capabilities of imaging at VA hospitals, Walt Schneider will start a new project to calibrate MRI scanners across 119 VA imaging centers.

3.3 University Community

As an interdisciplinary research center, LRDC faculty create connections across the University through joint appointments with departments and schools and through formal affiliations with training programs. Affiliations of faculty with training programs in other units include the CNBC (7), CNUP (1), Intelligent Systems Program (4), Learning Sciences and Policy Program (6) as well as with other training programs in the Department of Psychology and School of Education.

Talks based on Pitt Community. LRDC faculty (Binning, Fotuhi) gave talks on the Pitt campus and at national conferences on Pitt-based undergraduate student experiences: "Intervening for Equity: An Ecological Belonging Intervention to Foster Equity in College Science Courses"; "Fostering an Inclusive Mentoring Mindset," "Using Social Psychological Insights to Foster Equity in College Classrooms," "Creating Contexts of Belonging." Schunn, Psychology, spoke about "Scientific Literacy" for The Pitt Pulse Podcast. Marc Coutanche was a guest on Episode 10 of the Pitt Communication Science & Disorders Podcast (Oct 2021).

Department of Psychology Teaching Evaluation Project. LRDC faculty on this committee have helped develop methods for assessing teaching effectiveness.

Undergraduate diversity in STEM. A cross-disciplinary team is studying how to increase diversity among STEM majors.

Program Impact Initiative. Fotuhi served on a committee to evaluate support services for under-represented groups' transition to college.

Other contributions to the University Community. Several examples below:

- 1. One-on-one statistics consulting** offered by Fraundorf provided for both graduate students and honors undergraduate students including students from Psychology, Linguistics, Communication Sciences and Disorders, LSAP, and the Katz Graduate School of Business.
- 2. Dashboard for student success.** With collaborators in the Provost's office, Binning and Fotuhi created a centralized coordinating body to help manage, liaise with, and support parallel efforts to better support student success across the university in a collaboration called *We @ Pitt*.
- 3. Pitt College in High School.** Psychology/LRDC faculty Natasha Tokowicz worked with high school teachers, visiting schools and observing new teachers, to enable teachers to teach Pitt's Introduction to Psychology course at their institutions.
- 4. University's Advising and Mentoring Summit.** Fotuhi serves on the organizing committee.
- 5. Law School drop-out rates.** Fotuhi also serves on a Law School steering committee to help inform best practices to reduce drop-out rates for at-risk or vulnerable groups of students.

Also See "The Community Voices Study" in Section 2.3

3.4 Impact through commercialization

Psychology Software Tools. Developed at LRDC by Walter Schneider and his team, the E-prime is the world-leading software for designing and running behavioral experiments. It has more than 100,000 users in research institutions and laboratories in over 60 countries. The E-Prime manual has 5,491 citation counts.

Peerceptive. This peer-feedback tool was developed at LRDC by Chris Schunn. In 2020-2021, It has approximately 31,000 students at educational institutes in the U.S. (70% post-secondary) including 918 at Pitt. In 2021-2022 Peerceptiv was used by 68,031 students in the last year, including 2,318 at Pitt, more than doubling its usage. Peerceptiv obtained an SBIR grant from the Department of Education to create a new interface and set of materials to support the use of peer assessment in science education, with a focus on assessments aligned with the next-generation science standards.

Goal 4: Promote Diversity and Inclusion

4.1 Specific Programs

LRDC Undergraduate Internship Program. The LRDC Undergraduate Research Internship program hosted seven students (all from underrepresented minorities) in online mentoring in the learning sciences in the spring of 2021; in the summer of that same year, eight students participated. In 2017, 2018, and 2019 summer programs, six students were trained each year. In 2019, the program leaders (Tim Nokes-Malach and Natasha Tokowicz) received funding from the Pitt Seed Project for their LRDC Undergraduate Summer Internship Program. An in-person program is planned for 2022.

Director's Fellowship Program. Three diversity promoting Director's Fellowships were offered to graduate applicants and existing students this year. *Faculty diversity* is being increased this year through successful joint recruiting of two faculty with SCI and Psychology (Dietrich School).

Hot Metal Bridge (HMB) Continued joint sponsorship of the Hot Metal Bridge Program with A&S and Psychology. Funded one HMB student.

APA SUPRE program. LRDC generally hosts students who participate in the American Psychological Association's Summer Undergraduate Psychology Research Experience (SUPRE) program; in 2021 we hosted one SUPRE student.

Career Education and Enhancement for Health Care Research Diversity (CEED) Programs I and II, University of Pittsburgh. The CEED Program provides fellows, postdocs, and junior faculty from underrepresented minority groups with rigorous career development in a supportive, collegial environment. Presentations by LRDC faculty are made to the CEED Fellows each year.

Justice Scholar's Institute. LRDC faculty offered training to a group of 300 prospective Pitt students who are from the Homewood region, with many from under-served communities, to create structures and supports to help students better access the benefits of a post-secondary education.

4.2 Projects

STEM PUSH Network. This \$10 million NSF INCLUDES Alliance grant aims to increase diversity in postsecondary STEM undergraduate programs by leveraging pre-college outreach programs and aligning admissions processes, called the STEM Pathways for Underrepresented Students to HigherEd Network (STEM PUSH Network). This collaboration draws faculty from five Pitt schools/centers.

The Ecological Belonging Intervention in High School leverages the STEM PUSH Network to adapt, refine, and test an intervention based on belonging for underrepresented students. It is being tested in seven urban areas, reaching up to 2,000 students, and will yield a deeper understanding of what intervention features work, and for whom.

IFL Dallas Schools Project. This Gates funded project is a collaboration among LRDC researchers, the Institute for Learning, the Center for Urban Education, and the Dallas public schools to boost English Language Arts preparedness for a network of 14 Dallas ISD secondary schools in this largely minority-serving district. An additional Gates Foundation grant establishes IFL as a national hub for schools serving predominantly African American, Latinx, and low-income students.

UPCLOSE is working with the American Museum of Natural History, New York, to support the career pathways for diverse students to work in museums.

Ming-Te Wang and colleagues at CMU, RAND, and Viral Moment, are working on "Preventing Viral Racism on Tik Tok" to Gen Project: Educational Intervention and Web-Based Game for Youth" which focuses on middle-school aged students to help them understand what biases look and feel like related to race, gender, and ability-based privilege, and how to have empathy.

Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) project. Binning is part of a ten-campus research collaborative focused on issues related to belonging and equity in large college STEM courses at public universities.

Collaboratory Against Hate. Binning and Wang are members of the Collaboratory Against Hate, a Pitt/CMU joint initiative that has launched a new center to study extremist hate.

4.3 Staff participation.

CODIE. This new committee (Committee on Diversity, Inclusion and Equity (CODIE) has the goal to build racial and cultural competence to support culturally responsive, equitable practices over the next 3-5 years, including education and practices to build trust, belonging, and inclusion. This goal is both comprehensive and penetrating because it pushes LRDC toward accountability in every subgroup—the Executive Committee, the Director of Administration, the leader of technology services, and all LRDC committees.

Faculty and Research Associates engagement

Frits Pil became a Provost Fellow for Faculty, working with diversity chairs from all the units in the university to explore ways to strengthen our university community from a diversity standpoint.

Binning heads the Provost’s Pitt Success Research-Practitioner Advisory Board, in which he leads 12 cross-university project teams focused on issues related to access, diversity, and inclusion.

Binning also has been working directly with the Provost Office to evaluate the impact of campus diversity initiatives, including the Provost Academy, RISE, Bridges, the Pitt Transition Study, and the Pitt Success program.

Binning and Fotuhi made two presentations at the University’s Diversity and Inclusion conference.

Fotuhi developed the Adaptive Mindsets Toolkit, intended to support students from under-represented groups; its content is being hosted on a web portal included in the Student Success Services webpage, and made available to students as needed.

This training is now in its 4th year of implementation, with an increasing number of participants each year.

Coutanche is a member of the Department of Psychology’s First-Generation Affinity Group.

Nokes-Malach and Rosa Apodaca created new initiatives as co-chairs of CODIE, described below.

Tokowicz was recently elected to the Governing Board of the SPARK Society, a group that aims to create mentorship opportunities for junior cognitive psychologists of color. She also serves on the board of the Psychonomic Society Racial Justice Task force, and the Women in Cognitive Science Advisory Boards (both for the U.S. and the Canadian boards).

Tokowicz is also co-Chair (2021-2022) of the University Senate Equity Inclusion and Anti-Discrimination Advocacy Committee; and a member of the University Women in Medicine & Science Form Steering Committee. Tokowicz has also completed both the “Survivor Support Network Certificate,” and the “Mental Health Champion Certificate Program.”

Tokowicz and Director of Communications Elizabeth Rangel have completed the Racial Equity Consciousness Institute certificate program offered by the Pitt Office for Equity, Diversity & Inclusion.

A number of faculty members have participated in university workshops “Inclusive Pedagogy,” “Teaching Your Content Through an Equity Lens,” “Allyship and Advocacy: Responses to Xenophobia and Hate Crimes,” “Creating Accessible Courses for Remote Learning,” “Developing an Inclusive Mentoring Mindset,” “Diversity Forum,” “New to School: Supporting First-Generation Students,” “Supporting Transgender and Non-Binary Community Members,” and “Teaching with Equity.”

Goal 5: Embrace the World

5.1 International collaborations

LRDC faculty have more than 36 active collaborations with researchers outside the US (Australia, Belgium, Canada, China, Colombia, England, Finland, Germany, Israel, Netherlands, Norway, Republic of Korea, Spain, Sweden, Switzerland).

Current faculty and research associates collaborate with LRDC alumni including researchers in cognitive psychology, computer science, machine learning, and cognitive neuroscience from Belgium, Canada, China, France, Israel, the Netherlands, New Zealand, Spain, and Taiwan, among others.

Some examples:

Binning is working on a broad, collaborative project with a team of researchers in Europe seeking to understand and ameliorate prejudice against the Romani.

Karen Knutson is an advisor on a cultural mediascapes board at the University of Oslo.

Leyva served on the dissertation committee of a student from Norway. Leyva is also a grant reviewer for FONDECYT, which is the equivalent of NSF in Chile.

Perfetti is co-editor with international colleagues on an in-press volume by Cambridge University, *Global variation in literacy development*. The book focuses on issues of literacy development in post-colonial societies and issues of indigenous language and second language literacies among these societies.

Perfetti is also part of an international research team partnering with an on-line educational company that has developed on-line research-based games to support children's reading that are used by thousands of children in California, including the entire LA public school district. The team, the LAsER Consortium (**L**iteracy **A**cceleration through **S**calable **R**esearch), has developed a theoretical analysis of game features to support children's acquisition of reading skills.

Perfetti also served on dissertation committees of students in Canada and the UK.

5.2 International visiting scholars and students

In 2021, LRDC, of course, had fewer international visiting scholars (six compared with an average of 8). Sixteen full-time international students were at LRDC from 11 countries (Bangladesh, China, Colombia, Egypt, India, Mexico, Turkey, and Ukraine).

5.3 International affiliations of LRDC faculty

Crowley is an Adjunct Professor of Education, University of Oslo, Norway.

Litman is a Scholar in Residence at the Stockholm Digital Futures program.

Perfetti is a Distinguished Chair Professor at Taiwan Normal University.

Pil is a Fellow of the University of Cambridge, Judge Business School.

Rangel, Director of Communications, is completing the University "Global Competence Certificate Program."

Schunn is an honorary professor at Northeast Normal University, Changchun, China.

Schunn is also the Chair of the International Society for Design and Development in Education (ISDDE) and is part of an effort called the Diversifying Educational Design Initiative within the ISDDE.

Goal 6: Build Foundational Strength

6.1 Inclusion

Working to create and maintain a culture of inclusion is fundamental for having a productive and diverse talent among staff, students, and faculty. The CODIE committee of 2020-2021 has provided a forum for discussion and planning that brings inclusion and equity into all our activities. We join with Psychology in supporting diversity in the HMB program and in faculty service on the Department's active Diversity Committee.

6.2 Human resources foundations

We work to build an interdisciplinary and collaborative faculty as the foundation for our research center mission and to promote a sense of community and belonging across our staff, students, and post-doctoral and faculty-level researchers. *Strategic planning.* This year's strategic planning involved both staff at all levels and faculty. The planning process itself and the actions that will result were important in maintaining foundational strength in human resources.

Research foundation. Because of our neuroscience research, it is important to secure brain imaging tools. LRDC had a leadership role (Schneider) in establishing the joint CMU-Pitt Brain Imaging Data Generation & Education (BRIDGE) Center. This leadership continues under Fiez, who is Pitt-side co-director of the center.

Administrative foundation. An active and forward-looking administrative core is essential in building and maintaining a strong community.

a. Director of Administration (Kyle Davison) has continued with the practices, including more regular staff meetings, that have improved the morale of administrative staff and has developed a plan for cross training staff to back up our grants administrator, who again this year succeeded in getting all applications successfully submitted.

b. Tech staff (led by Anthony Taliani) accomplished the relocation of the LRDC into the Murdoch building which involved coordinating the logistics of the move, setting up the offices with furniture and ensuring all of the Center's technological equipment was setup. The team has also been able to achieve a high level of customer service without disruptions in service while working a flex schedule of two days in the building, three days remote.

c. Director of Communications (Elizabeth Rangel) initiated a new bimonthly *LRDC Research News* e-mail newsletter to extend the impact of LRDC research on campus and beyond. It is distributed to Deans, Directors, faculty in partner units, and the Chancellor's and Provost's administrative teams. The *LRDC Research News* also goes to the approximately 530 alumni and the LRDC Board of Visitors. Rangel also completed the creation of the LRDC website. She provides frequent communication updates to everyone in LRDC on a wide range of subjects (talks across the University, news updates, grants and fellowships, announcements of faculty and student achievements). She works to publicize the research of the center on campus, through *Pittwire*, and nationally, through online news sources such as *The Conversation*.

d. Executive Assistant to the Director (Marge Gibson) provides wide ranging support to projects across the Center beyond those specifically in the Director's office.

Graduate Students

- **Graduate Student Council.** Students run elections, manage a budget provided by LRDC, plan events, and send a representative to the LRDC Executive Committee.
- **Scott Fraundorf offers one-on-one consulting in statistics** to graduate and honors undergraduate students in all fields.
- **Mentoring meetings with faculty** to support career aspirations by completing individualized development plans
- **Cognitive Talk Series** held weekly.

6.3 Connectedness

The Reading and Language Group brings in students and faculty across the university (e.g. students in the Linguistics and Communications Sciences) to give talks at their regular meetings, thus creating an informal network of language researchers across campus.

Cross-university STEM meetings are held to encourage interaction among interdisciplinary researchers and provide alternative perspectives and ideas.

LRDC faculty members (Schunn and Matsumura) serve as co-directors of the Institute for Learning (IFL).

The LRDC Director is on the Advisory Board of the Office of Child Development and the Provost's Advisory Council on Instructional Excellence.

The LRDC Associate Director for Education and Practice serves on the Provost's Advisory Council on Instructional Excellence (ACIE).

Fiez is co-director of the BRIDGE Center. **Schneider and Fiez** helped establish this joint CMU-Pitt MRI Center.

LRDC faculty collaborate with others in a number of departments across the university. Beyond collaborations with our principal partners, many faculty have informal as well as formal connections with units across the university and CMU.

Social events are held annually for the entire LRDC community: Fall Welcome Reception, Winter Holiday Party, Summer Picnic, although none held in 2021 due to pandemic restrictions.

7.0 Notable Accomplishments of LRDC Researchers

7.1 Research Productivity

In 2021-2022, LRDC researchers published 121 journal articles or conference proceedings, one book, and six book chapters.

7.2 Academic Recognition of LRDC Researchers (Alphabetical)

Isabel Beck, Senior Scientist and Professor Emerita, was named a 2021 Distinguished Alumni Award from the School of Education (Mar 2021); **Juan Del Toro**, postdoc, and **Ming-Te Wang**, Education, received a racial equity special grant from Spencer Foundation for "Police Stops and School Adjustment: Examining Underlying and Protective Mechanisms among Black Adolescents" (Apr 2021); **Lindsay Page**, Education, was ranked 168 out of 200 scholars for shaping educational practice and policy in the "2021 Edu-Scholar Public Influence Rankings" put out by Ed Week (Jan 2021); **Walter Schneider**, Psychology, and **Sudhir Pathak**, Research Associate, received the Best Demo Award at the 22nd IEEE International Conference on Mobile Data Management for "HealthDist: A Context, Location and Preference-Aware System for Safe

Navigation" (Jun 2021); **Schneider** and **Pathak** also received the Best Industry and Application Paper Award for "A Context, Location and Preference-Aware System for Safe Pedestrian Mobility. (Jun 2021)." **Ming-Te Wang**, Psychology and Education, received the 2021 Society for Social Work and Research (SSWR) "Excellence in Research Award" (Feb 2021); **Wang** was also awarded the "Distinguished Research Award for Human Development & Learning" from the American Educational Research Association (AERA) (Feb 2021) and was named a top-cited education researcher for 2021 (Dec 2021). **Wang** joins 16 Pitt faculty members recognized as highly influential in their fields by the UK-based Clarivate.

7.3 Academic Recognition of LRDC Graduate Students (Alphabetical)

Lorraine Blatt, Developmental Psychology, received the 2021 Jeremy Johnson Landen Award (Apr 2021); **Sonia Crompt**, Computer Science, received the best paper award at the Workshop for Undergraduates in Educational Data Mining and Learning Engineering (Jun 2021); **Nabila Jamal-Orozco**, and **Isabella Kahhale**, all Psychology students, received the Spring 2021 LRDC Graduate Student Council Award (Jun 2021); **Hillary Henry** and **Michael Tumminia**, Education, received the Fall 2021 LRDC Graduate Student Council Award (Dec 2021); **Sara Jaramillo**, Psychology, received a National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) award (Mar 2021); **Nikki Lobczowski**, post-doc working with **Erin Walker**, **Diane Litman**, and **Timothy Nokes-Malach**, received the prestigious Paul R. Pintrich Outstanding Dissertation Award from Division 15 (Educational Psychology) (Sep 2021); **Alex Silver**, Psychology, was awarded the Dr. Ruth L. Myers Memorial Award for Excellence in Mentoring from the Department of Psychology (Apr 2021).

7.4 Media Recognition of LRDC Researchers in National News (Alphabetical)

Marc Coutanche, Psychology, was featured in a *Popular Mechanics Magazine* newsletter "Your Conscious Mind is Terrible at Multitasking: Here's Why" (Oct 2021); **Juan Del Toro**, Research Associate, wrote an editorial in the *American Journal of Public Health* (Oct 2021); **Cynthia Golden**, Center Associate, was interviewed for "Three Questions for Cynthia Golden" by *Inside HigherEd* (Jan 2021); **Brian Galla**, Psychology, was featured in *Psychology Today* in "How To Help Teens Cut Back on Social Media" (Oct 2021); **Diana Leyva**, Psychology, was featured in *The Conversation* in "How Getting Kids to Make Grocery Lists and Set the Table Can Improve Their Vocabulary and Willingness to Learn" (Nov 2021); **Lindsay Page**, Education, was mentioned in a *Los Angeles Times* article, "Artificial Intelligence Meets Real Friendship: College Students are Bonding with Robots" (Mar 2021); **Jennifer Russell**, Education, was quoted in the *Wall Street Journal* "Remote Kindergarten During COVID-19 'Could Impact This Generation of Kids for Their Lifetime" (May 2021); **Chandralekha Singh**, Center Associate, was featured in *Inside Higher ED's* article, "Why Flipped Classes Often Flop" (Jan 2021); **Ming-Te Wang**, Psychology, was included in an Educational Psychology Review article that investigated productivity in early career scholars (Aug 2021).

7.5 Media Recognition of LRDC Researchers in Local News (Alphabetical)

Brett Bankson, graduate student, was featured in the *Pittsburgh Post-Gazette* article "Top student to 'Top Chef': Pitt Ph.D. candidate to appear on cooking show" (August 2021)

7.6 Media Recognition of LRDC Researchers in Online News (Alphabetical)

Brian Galla, Psychology, was featured in Character Lab's "Tip of the Week" for "Values-Alignment Messaging Boosts Adolescents' Motivation to Control Social Media Use," giving advice to teens struggling with excessive social media use (Oct 2021); **Alberto Guzman-Alvarez**, Education, and **Lindsay Page**, Education, were featured in the blog post, "FAFSA Verification: An Undue Burden for Students and Public Colleges," a blog post of the Brookings Institute (June 2021); **Nikki Lobczowski**, Postdoctoral Associate, joined the APA Division 15 podcast to discuss her recent Educational Psychologist article, "Bridging Gaps and Moving Forward: Building a New Model for Socioemotional Formation and Regulation" (Oct 2021); **Jennifer Russell**, Professor, Education, and **Melissa Libertus**, Psychology, were quoted in a February 19 NPR online article "Why Kindergarten? Pandemic Disruption Forces Big Questions About U.S. Education System." (Feb 2021); **Christian Schunn**, Psychology, and **Yong Wu's** research on "Using Peer Feedback in High-School Writing Classes" featured in a Marshall Memo, a weekly roundup of important ideas and research in K-12 education (May 2021). Lindsay Clare Matsumura was interviewed for a podcast on supporting dialogic teaching by graduate students at Groningen University, Netherlands.

7.7 Media Recognition of LRDC Researchers in University News (Chronological)

Kevin Binning, Psychology, and **Chandralekha Singh**, Physics, were featured in the January 11 *Pittwire* article "Student Belonging Exercise Erases Achievement Gaps in Biology, Physics Courses." (Jan 2021); Brian Galla, Psychology, was featured in the January 19 Institute for Learning's (IFL) Bridges to Learning "Mindfulness in Schools" (Jan 2021); **Jennifer Iriti**, **Lindsay Page**, and **Danielle Lowry**, Education, were featured in a *Pittwire* accolade for their Pittsburgh Promise grant to conduct an evaluation of the Promise Coaching Initiative (Jan 2021); **Lindsay Page**, Education, was named in a *Pittwire* accolade as a national scholar of influence (Feb 2021); **Kevin Ashley**, Law, and **Diane Litman**, Computer Science, were featured in a *Pittwire* accolade for their National Science Foundation (NSF) award "FAI: Using AI to Increase Fairness by Improving Access to Justice" (Feb 2021); **Melissa Libertus**, Psychology, was featured in the March Institute for Learning's (IFL) Bridges to Learning "Bridging to Research: Numeracy and Math Sense in Young Children" (March 2021); **Ming-Te Wang**, Education, was featured in the April 6 *Pittwire* accolade for the AERA Distinguished Research Award for Human Development and Learning and the 2021 SSWR Excellence in Research Award (Apr 2021); **Sara Jaramillo**, graduate student, was featured in *Pittwire* for receiving a National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) award (Apr 2021); **Marc Coutanche**, Psychology, answered the question "Why Do We Want to Love Aliens?" in a May *Pittwire* article "What's Out There?" (May 2021); **Ming-Te Wang**, Education, **Christina Scanlon**, **Meng Hua**, doctoral candidates, and **Juan Del Toro**, Research Associate, were featured in a May *Pittwire* article, "How to Promote Adolescent Social Distancing" (May 2021); **Brett Bankson**, graduate student, was featured by both *Pittwire* and *The Pitt News* for winning "Top Chef Amateurs", (Sep 2021) **Jamie Hanson**, Psychology, was featured in the *Pittwire* article "A Little-studied Brain Circuit Could Have Big Effects on Learning. (Oct 2021); **Brian Galla**, Psychology, was featured in the *Pittwire* in "Brian Galla wants to help your teen kick their Instagram habit" (Oct 2021); **Marc Coutanche's** paper, "Expertise Moderates Incidentally Learned Associations Between Words and Images," was the topic of discussion on Episode 10 of the Pitt Communication Science and Disorders Podcast (Oct 2021).