

## **FY 2021 Report for The Herb Innovation Center**

This report summarizes The Herb Innovation Center (center hereafter) activities that took place between July 13, 2020 and June 30, 2021. Activities included providing research support or research opportunities for undergraduate students, graduate students, and faculty in the Judith Herb College of Education (JHCOE). Additionally, the center provided workshops, professional development funds, and assisted faculty with pre- and post-award grant support. A list of services, support, and resources offered by the center can be found on the center's [website](#).

### **Undergraduate Research Support**

During fall 2020 the center emailed JHCOE undergraduate students to share with them information about the Office of Undergraduate Research (OUR) and inform them about the center, including details about available research support and opportunities through the center. Additionally, the center hosted a joint Q&A session with OUR staff during fall 2020 for undergraduates to learn about OUR and the center. The session attracted five students. The center hosted a second Q&A session during spring 2021 for undergraduates to learn about resources available in the center and a reminder about funding available through OUR. Three students attended the Q&A session and consequently worked on a research proposal with a JHCOE faculty mentor, with additional support and mentoring from the center. Two proposals were submitted for summer 2021 funding and scored well. Although neither received funding, both were encouraged to resubmit. As a reference point, in FY 2020 the JHCOE did not have any undergraduate students submit proposals to OUR for funding.

To help reach more undergraduate students, the center created an intake form to be completed by those interested in a research opportunity. This form became available to students during spring 2021 and can be found on the 'Undergraduate Research' link for the center. Students were informed about the new intake form via email. Finally, the center director collaborated on a manuscript with one undergraduate student that also included a graduate student and another faculty member from the JHCOE as well as a faculty member and graduate student from the College of Health and Human Science (HHS). This project was submitted for a conference presentation during summer 2021.

Duckett, R., Garcia, M., Kassem, J., Fox, C., Bazett-Jones, D., & Toland, M. D. (2022, April 22-25). *Rasch evaluation of the Pittsburgh Sleep Quality Index in adolescent endurance athletes* [Conference Presentation]. Submitted to AERA annual meeting San Diego, CA.

### **Graduate Research Support**

In addition to undergraduate research support, the center provided research support to JHCOE graduate students. During fall 2020 and spring 2021 JHCOE graduate students were sent emails informing them of services and support available through the center. The center hosted a Meet & Greet session during fall 2020 for graduate students to learn about resources available in the center and meet the center staff. A second Q&A session was provided during spring 2021 and the session involved the Graduate Student Association (GSA) representatives for the JHCOE. Throughout the academic year, the center periodically emailed graduate students information about dissertation or other funding opportunities.

During FY 2021 the center provided research support to 20 doctoral students. Most students were majoring in Higher Ed ( $n = 6$ ), followed by Curriculum & Instruction ( $n = 5$ ), Theories and Social Foundations ( $n = 4$ ), Educational Psychology ( $n = 3$ ), Educational Administration and Supervision ( $n = 1$ ), and Research and Measurement ( $n = 1$ ). Support included providing general writing advice ( $n = 10$ ), suggestions for research method/design ( $n = 10$ ), data analysis ( $n = 8$ ), dissertation proposal requirements ( $n = 1$ ), and help with seeking dissertation funding support ( $n = 1$ ). Data analysis methods that were recommended or discussed with graduate students included hierarchical linear modeling (multilevel modeling), general linear model (e.g., correlation, regression, ANOVA), Rasch, and classical test theory.

In addition to providing one-on-one meetings with students or working sessions with faculty advisors at the meeting, the center provided a virtual dissertation writing camp for doctoral students. The purpose of the writing camp was to provide students with focused writing time and feedback about their writing during spring and then again during summer 2021.

To increase graduate students' engagement in presenting their research and position them to receive awards, the center emailed students during spring 2021 to encourage them to compete in the 3MT (3-minute Thesis). Additionally, the center organized three practice and feedback sessions for students. Five students from the JHCOE attended these sessions along with four students outside the JHCOE who attended the final session. Ultimately, five JHCOE students

competed in the 3MT competition, two made the finals, and one student placed second in the final 3MT at UToledo. As a reference point, in FY 2020 the JHCOE did not have any students compete in the 3MT.

In addition to the graduate student involvement noted in the ‘Undergraduate Research Support’ section, another graduate student participated in writing a manuscript with the center director and two colleagues at another institution.

Hanley, C., Toland, M. D., Vanderford, N., & Lederer, N. (In prep). Evaluating a new adolescent Cancer Literacy Scale: A comparison of different psychometric methods.

### **Faculty Research Support**

A major goal of the center is to provide research support to faculty in the JHCOE, which involves identifying grant opportunities, assisting with budgets and paperwork, shared writing of grant narratives, collaborating on study design, conducting power analyses, reviewing manuscripts, cowriting manuscripts, and assisting with grants on the post-award side. To increase awareness of the center, center staff emailed JHCOE faculty during fall 2020 about the various support services offered through the center, presented during a fall 2020 college-wide faculty and staff meeting, and held small group or one-on-one meetings with faculty and staff to answer their questions about the center and its services. To increase research activity in the JHCOE, the center periodically emailed faculty about upcoming research, publication, and grant opportunities.

To encourage faculty research development, the center provided each JHCOE faculty member up to \$1,200 for professional development. Nine faculty members took advantage of the funds with a total expenditure of \$2,049. Of note, this expenditure is likely low could due to continuing pandemic and lack of actual travel permitted by the university and that most conferences were made virtual due to the pandemic. Additionally, the center shared with faculty via email information about professional development opportunities (e.g., workshops organized by national organizations or individual organizations). To help faculty learn about how to search for grants, the center staff worked with the Office of Research and Sponsored Programs to offer a training session on how to search for funding using SPIN. A video recording of this session was posted on the center’s website and an email sent to faculty about this resource.

Additionally, the center director worked on a manuscript with a JHCOE faculty member and several other faculty at other institutions or agencies. The manuscript was submitted to one journal and initially rejected but has since been reworked and now under review with another journal.

Lingat, J. M., Ryser-Oatman, J. T., Epps, M., Richardson, J. W., Sampson, S. O., Toland, M. D., & Brace, D. (2021, Under review). "We have our own belonging": A qualitative inquiry investigation of postsecondary students' sense of belonging across online and face-to-face course formats. To be submitted to *Student Engagement in Higher Education*.

The center director was also involved in the publication of 5 manuscripts and a book chapter with non-JHCOE faculty or students, but two of the manuscripts were started and completed with faculty and a student at UToledo. All other projects involved non-UToledo affiliates.

Garcia, M. C., Taylor-Haas, J. A., Rauh, M. J., Toland, M. D., & Bazett-Jones, D. M. (Accepted). Sport specialization and quality of life among middle- and high-school long-distance runners of different injury status. *Journal of Sports Sciences*.  
<https://doi.org/10.1080/02640414.2021.1954350>

Dueber, D. M., Toland, M. D., Lingat, J. E. M., Love, A. M. A., Qiu, C., \*Wu, R., Brown, A. V. (Accepted). To reverse item orientation or not to reverse item orientation, that is the question. *Assessment*. <https://doi.org/10.1177/10731911211017635>

Peugh, J. L., Beal, S., McGrady, M. Toland, M. D., & Mara, C. (In press). Analyzing discontinuities in longitudinal count data: A multilevel linear mixed model. *Psychological Methods*. <https://doi.org/10.1037/met0000347>

Toland, M. D., Grisham, J., Waddell, M. L., Crawford, R., & Dueber, D. M. (2021). Scale evaluation and eligibility determination of a field-test version of the Assessment, Evaluation, and Programming System 3rd Edition. *Topics in Early Childhood Special Education*. <https://doi.org/10.1177/0271121420981712>

- Garcia, M. C., Taylor-Haas, J. A., Rauh, M. J., Toland, M. D., & Bazett-Jones, D. M. (2021). Sport specialization in middle- and high-school long-distance runners. *Journal of Athletic Training*. <https://doi.org/10.4085/462-20>
- Grisham-Brown, J., Crawford, R., Waddel, M., & Toland, M. D. (2021). Psychometric properties of the Assessment, Evaluation, and Programming System for infants and children, 3rd edition (AEPS-3). *Journal of Early Intervention*, 43(1), 24-37. <https://doi.org/10.1177/1053815120967359>

### **Meetings with UToledo Faculty, Units Outside the JHCOE, and School/Community Partners**

Another goal of the center is to create partnerships with non-JHCOE units as well as schools and community agencies in the Toledo metro area. During fall 2020 the center director met with the dean of the College of HHS and program chairs for Counselor Education and School Psychology to share details about the center and the desire to partner together on research grants. Also, during fall 2020, the center staff presented to faculty in the Department of Mechanical, Industrial, and Manufacturing Engineering (MIME) about the center and desire to partner together on research grants. The center has written letters of support for MIME faculty but has not been a co-leader on grants with MIME faculty to date. The center director also attended two Toledo Affiliation of Black School Educators (TABSE) meetings to find ways to partner with TABSE on projects. Finally, during spring 2020 and then again during spring 2021, the center director met with the Provost and her team about Curricular Analytics and ways to partner on a funded project.

### **Workshops/Presentations**

During spring 2021 two presentations were organized by the center. One was led by a JHCOE faculty member (18 attendees) and another by the center director (six attendees):

Snauwaert, D. (2021, April 2). Can empirical science tell us what is right or good?: Exploring the nature of methods of normative inquiry.

Toland, M. D. (2021, April 14). Overview and introduction to item response theory.

In addition to the presentations, the center director provided two invited guest lectures to students in two graduate courses with the JHCOE during spring 2021. One lecture was titled ‘The Importance of Measurement Invariance in Cross cultural Research’ and the other was ‘Aligning Research Questions with Design and Analysis.’ Finally, the center shared via email details about free workshops/presentations occurring across campus or at other universities.

## **Grants**

As of June 30, 2021, the center collaborated on or supported (i.e., not listed as a key personnel) 23 grant proposals of which 2 were funded, 7 were pending, 4 started prior to June 30 (in prep), 8 were not funded, and 2 were not submitted. One proposal was not submitted because the submitting agency left out the center’s portion of the grant for an unknown reason. A second proposal was not submitted because the President of the lead University (not UToledo) decided to not approve the proposal due to the cost-share requirement, although the proposal was a resubmission and had received a high, but not fundable, score the prior year. As of June 30, 2021, one internal grant was funded (\$17,495), one external grant was funded (\$19,996), and 14 were pending. Of the 16 grant proposals submitted, excluding center staff, eight included at least one faculty or staff member from the JHCOE, two included faculty outside of the JHCOE, and six were written with faculty outside of UToledo.

### **Funded Grants (as of June 30, 2021)**

Johnson, N. (PI). The Infusion of Chemistry Instruction and Metacognitive Learning Strategies into an Existing Summer Bridge Program: A Case Study. Sponsor: UToledo-RSP. May 10, 2021-May 1, 2022. (\$17,495). Submitted January 21, 2021 and awarded funding March 12, 2021.

Toland, M. D. (PI), & Kumar, R. Psychometric Investigation of Teacher Beliefs and Practices Survey. Sponsor: Zucherg Initiative. May 15, 2021 – August 31, 2021. Subaward to UToledo from Harvard (\$19,996).

### **Pending Grants (as of June 30, 2021)**

Toland, M. D. (PI), & Denyer, J. (Co-I). CTE Teacher Preparation and Retention. Sponsor: Ohio Department of Education. July 1, 2021 – June 30, 2022. (\$100,000). Submitted July 1,

2021 and awarded July 15, 2021. Of note, original PI was Landversicht, E. D., but he left UToledo to take a new superintendent position at Upper Sandusky.

Wilson, K. S. (PI), & Toland, M. D. (Co-I). High Schools That Work. Sponsor: Ohio Department of Education. July 1, 2021 – June 30, 2022. (\$423,425). Submitted June 30, 2021.

Wilson, K. S. (PI), & Toland, M. D. (Co-I). Northwest Ohio Tech Prep Regional Center. Sponsor: Ohio Department of Education. July 1, 2021 – June 30, 2022. (\$482,433). Submitted June 30, 2021.

Toland, M. D. (PI). Comparative Study of COMPASS Adaptations for Improving Public School Outcomes of Children with Autism Spectrum Disorder Using ACT Smart. Sponsor: National Institute of Health, Clinical Trials to Test the Effectiveness of Treatment, Preventive, and Services Interventions (R01 Clinical Trial Required). June 1, 2022 – May 31, 2027. (Subaward to UToledo from BSU - \$139,307). Submitted June 15, 2021.

Czajkowski, K. (PI), Toland, M. D. (Evaluator), & Kumar, R. (Evaluator). Societal Challenges within a Spatially Integrated Social Sciences Framework. Sponsor; NSF – NRT. October 1, 2021 – September 30, 2026. (\$2,997,176). Submitted February 25, 2021.

Kumar, R. (PI), & Toland, M. D. (Co-I) Teachers Implicit and Explicit Bias and Student Outcomes. Sponsor: Spencer – Large Grants. (Subaward to UToledo from University of Auckland, NZ - \$250,000). Submitted February 2, 2021.

Bazett-Jones (PI), D. M., Garcia, M. C., & Toland, M. D. (Co-I). The Influence of Training Loads on Running-Related Injuries in High School Cross-Country Runners: A Prospective Study. Sponsor: NATA Research & Education Foundation. July 1, 2021 – June 20, 2024. (\$57,268). Submitted February 15, 2021.

**Grant work that started before June 30, 2021, but submitted on or after July 1, 2021**

Welsch, R. (PI), Denyer, J., Schneider, R., Sekhar, P., Templin, M., Stewart, V., Kehus, M., Devlin, P., & Johanning, D. Launching Educators for All Learners: UToledo's Dual License Initiative. Sponsor: Ohio Deans Compact. Improving the Capacity of Ohio Institutions of Higher Education to Prepare All Educators to Better Meet the Needs of All Learners. September 1, 2021 – June 30, 2023. (\$225,000). Work on this grant started in June of 2021, submitted July 16, 2021, and awarded August 2021.

Toland, M. D. (PI). Psychometric and statistical support for NIOSH research projects in U.S. middle and high schools. Sponsor: U.S Department of Health and Human Services, CDC&P; National Institute for Occupational Safety and Health. Intergovernmental Personnel Agreement (IPA). September 1, 2021 – August 31, 2022. (\$26,000). Work on proposal started in June 2021, but submitted August 2021.

Hamer, L. (PI), Mavima, S., & Toland, M. D. (Co-I). Greater Toledo Afrocentric Teaching Workshop. Sponsor: Greater Toledo Community Foundation. January 10, 2022 – January 9, 2023. (\$25,000). Work on this grant started in spring 2021 and was submitted July 15, 2021.

Alaraje, N. (PI), Sun, W., Oluoch, J., Javaid, A., Fox, C. (Evaluator), & Toland, M. D. (Evaluator). CyberCorps Scholarship for Service: Academic Student Success of Undergraduate and Graduate Education in Cybersecurity (SFS-ASSURE-C). Sponsor: National Science Foundation. January 1, 2022 – December 31, 2026. (\$3,854,012). Work on this grant started June 2021 and submitted July 15, 2021.

#### **Not Funded Research Support (as of June 30, 2021)**

Hamer, L. (PI), Cox, J., Johnson, N., Aguiton, R., Malakpa, S., & Toland, M. D. (Key Personnel) Teach Toledo Scholars. Sponsor: United Way Greater Toledo. July 1, 2021 – June 30, 2024. (\$185,220). Submitted January 8, 2021.

Witte, R. (PI), Denyer, J., Janak, E., Li., T. Fulbright Teaching Excellence and Achievement Program. Sponsor: Fulbright. January 1, 2022 – December 31, 2022. (\$169,758). Submitted April 23, 2021.

Stone, G., & Toland, M. D. (Co-I). Assessment of Bias in the Student Evaluation of Faculty. Sponsor: Spencer - Racial Equity Special Research Grants. July 1, 2021 – June 30, 2022. (\$74,986). Submitted January 12, 2021.

Hamer, L. (PI), Mavima, S., & Toland, M. D. (Key Personnel). Virtual Institute of Afrocentric Teaching. Sponsor: Ohio Humanities. May 1, 2021 – June 30, 2022. (\$19,998). Submitted January 7, 2021

Toland, M. D. (PI). Comparative Study of COMPASS Adaptations for Improving Public School Outcomes of Children with Autism Spectrum Disorder Using ACT Smart. Sponsor: National Institute of Health, Clinical Trials to Test the Effectiveness of Treatment,

Preventive, and Services Interventions (R01 Clinical Trial Required). June 1, 2021 – May 31, 2026. (Subaward to UToledo from BSU - \$139,307). (2% Academic Years 1-4, 10% Academic Year 5 and 10% Summer Year 5).

Toland, M. D. (PI). COMPASS Across Settings (CAST) for Integrating School, Home, and Community Services and Improving Transition Outcomes for Students with ASD. Sponsor: Institute of Education Sciences, Development and Innovation – Goal. August 1, 2021 – July 31, 2025. (Subaward to UToledo from BSU - \$41,579). (5% Academic Years 2-4).

Toland, M. D. (Key Personnel), & Johnson, N. Y. EKV-NOYCE Science Scholars. Sponsor: National Science Foundation, 17-541, Robert Noyce Teacher Scholarship Program, Track 1. March 1, 2021 – February 28, 2026. (Subaward to UToledo from EKV - \$66,250). (~3.68% Summers 1-5)

Hamer, L. (PI), Cox, J., Kumar, R., & Toland, M. D. (Co-I). Circles and verses afterschool program with UToledo near-to-peer mentors. Sponsor: PROMEDICA, Education & Training: Afterschool programming. (Subaward to UToledo from Junction Coalition). Submitted October 2020.

### **Staff Hiring**

During spring 2021, the center interviewed several candidates for a postdoctoral researcher position. The search was successful, and the center hired its first postdoctoral researcher, Dr. Falynn Thompson. The duties of the postdoctoral researcher are to support faculty in designing and implementing cutting-edge research projects that will advance PK-12 education and teaching; analyze data; write manuscripts; seek external funding; support graduate student research; mentor undergraduate student research projects; provide supplemental writing support to undergraduate and graduate students; and teach up to one course each semester. The addition of a postdoctoral researcher in the center will allow more devoted time and energy to supporting faculty and student research and offering undergraduate and graduate students applied research experiences that will advance the center and JHCOE's success and mission. Finally, the addition of a postdoctoral researcher allows the center to provide more professional development opportunities around research and open more opportunities for the center Director to expand campus and regional partnerships.

Special thank you to the postdoctoral researcher search committee, which included: Drs. Ruslan Slutsky, Revathy Kumar, and Natasha Johnson; and doctoral student, Aaron Baker.

### **Website**

The center website was updated periodically during FY 2021 and continues to be updated in order to find a better way to make the resources offered through the center available to all stakeholders.

### **Advisory Board**

To ensure that The Herb Innovation Center meets the center's mission and goals, the center sought out advisory board members from within the JHCOE, outside the JHCOE, and those beyond campus. Emails requesting nominations and self-nominations were sent out to the JHCOE faculty. Additionally, campus members outside the JHCOE were recommended and local superintendents were also recommended by JHCOE faculty and administration. The purpose of the advisory board is to provide strategic advice about planning, oversight, services, resources, grant practices, sustainability, and direction to ensure the center meets its mission. In addition to advising the Center, advisory board members provide referrals for potential collaborators/partners, those needing consultation on a research project, and being ambassadors of the center. Initial advisory board members will commit to 2 or 3 years to stagger who is on the advisory board, and then will end up being a fixed 2-year term with renewal up to 2 years if a new member cannot be identified or the advisory board member desires to stay on for an additional 2 years.

### **Members and Contact Information of the Herb Innovation Center Advisory Board**

Judy Herb (JHCOE Alum) marvannafl@aol.com	Founder and Benefactor of Herb Innovation Center
Romulus Durant, EdD rdurant@tps.org	Superintendent of Toledo Public Schools
Tom Hosler, EdD tom@perrysburgschools.net	Superintendent of Perrysburg Public Schools
Brian Ashburner, PhD brian.ashburner@utoledo.edu	Associate Dean, College of Natural Sciences and Mathematics
Sekhar Pindiprolu, PhD spindip@rockets.utoledo.edu	Professor, Teacher Education faculty representative
Svetlana Beltyukova, PhD sbelyu@rockets.utoledo.edu	Professor, Educational Studies faculty representative
Michael Toland, PhD Michael.Toland@utoledo.edu	Executive Director, Herb Innovation Center

### **Goals for FY 2022**

- Examine and support the research agenda of new faculty to the JHCOE
- Provide more research support for all Associate Professors within the JHCOE
- Continue to provide research support for all Full Professors within the JHCOE
- Provide financial support for professional development activities for faculty and staff
- Continue to update and refine the center's website
- Increase awareness of the center among students and faculty in the JHCOE, on-campus and within the Toledo metro area
- Create more research opportunities for students and faculty
- Increase the number of undergraduate and graduate students involved in research
- Increase the number and quality of grants submitted and funded by external agencies
- Build partnerships with local schools, community agencies, and other UToledo units

**GO ROCKETS!**