LiDA Center 2020-21 Report

(June 2020-May 2021)

CONTENTS

(to access specific sections of the report, click on its title below and then on "bookmark", OR click on its title on the side bar)

Note: LiDA staff has been identified with an asterisk (*) and other LiDA Community members with a double asterisk (**)

VIDEO INTRODUCTION

Please watch this 4 minute video first, as it was designed to frame the rest of the report.

VIDEO INTRODUCTION <mark>*(TBA)*</mark>

HOW THIS REPORT IS ORGANIZED

With the exception of the Executive Summary, this annual report is organized around the five strategic goals (and related sub-goals) articulated in our 2019 LiDA Strategic Plan. You can choose to read about the progress made this year with respect to specific goals in any order you wish, using the linked table of contents provided on the left side bar.

For each goal, we have listed all the projects/ activities that contributed towards that goal during the period covered by this report. To keep the main text to a minimum, for each project/ activity listed under each goal we provided just a brief description (which readers familiar with that project/ activity can skip), followed by information about specific achievements made this academic year related to that goal. Links to artifacts and other documents providing additional information have been embedded in the text, for readers interested in learning more.

As some of our projects/ activities address multiple goals, they will be listed more than once - so some repetition was unavoidable.

This annual report is intended to complement other "cumulative" reports (i.e., from the start of the LiDA Center in 2018 to date) that are also accessible on the Strategic Planning and Reports page of our website.

EXECUTIVE SUMMARY

To say that the pandemic made the academic year 2020–2021 unique is an understatement. The fact that it was only the third year for our growing Center for Learning in the Digital Age (LiDA) made it even more challenging.

As most schools and universities had to deal with remote teaching (at least partially) for an extended period of time, we had no choice but to rise to the occasion and use our expertise in online teaching to support efforts toward offering the highest quality learning possible under the circumstances. At the same time, we were eager to move on with the implementation of our 2019 strategic plan – which had been put on hold when the pandemic hit, just a few months after its approval.

At the first look, this appeared to create a daunting conflict of purposes. The resulting tension was not always easy to navigate, but a vital first step was to recognize early on that strategic plans should be "living documents" that adapt to changing external circumstances — such as a pandemic!

We also realized that the disruptions and new solutions created by the pandemic could act as a catalyst for innovation in education. So we interpreted our role as not just responding to the immediate need of supporting remote teaching, but also studying lessons learned and potential implications of the pandemic to improve education post-COVID.

For that reason, we decided to add a sixth strategic initiative to our 2019 strategic plan — "*Responding to and Learning from the Pandemic*". We devoted significant resources to it, and also used it as a vehicle to address many of our strategic goals. This led to an alignment of purposes that resolved our initial conflict to the benefit of all concerned.

As we look back at what we accomplished at LiDA in the past year, we are proud to see that initiatives directly related to the pandemic indeed helped us make progress towards each of our original strategic goals. Some projects had to be put on hold (most notably, developing a comprehensive communication plan, some planned publications, and extending our donor base), and others slowed down; yet we were able to redefine several projects to include a meaningful component related to the pandemic, as well as pursue a few timely opportunities unrelated to the pandemic.

This year was also marked by many efforts to apply for grants and contracts to support our work moving forward; as some awards have already materialized, they represent important steps forward in the LiDA Center's quest for financial sustainability. At the same time, these funded projects have created new needs for human resources — a good problem to have, but nevertheless a challenge we need to address as we move forward.

Here are some highlights of key achievements made this year and their significance. A detailed account of achievements made with respect to each of our strategic goals is provided in the rest of the 2020-21 Annual Report.

Accomplishments related to the pandemic

This year we were able to directly serve twice as many educators than in the previous years – in both K-12 and higher education – using professional development (PD) we designed and offered to support remote teaching.

These professional learning opportunities ranged from one-hour workshops, to the equivalent of two full days of training, to a full graduate course; they also included a publicly accessible "eModule" – a collection of online resources accompanied by suggestions about how to use these materials for individual study or group work. We plan to build on these experiences as we design new PD programs for K-12 teachers as part of two five-year NYS "Smart Start" grants that were recently awarded and will start in summer 2021.

A significant portion of our scholarship work this year has been focused on understanding implications of the pandemic in both K-12 and higher education

settings — involving a combination of surveys, interviews, debriefing sessions with educators and students, and also including a redesign of our LiDA Colloquium Series to provide a virtual vehicle for dialogue on these issues. Preliminary findings from data collected from these various sources were immediately disseminated though conference presentations and other media – such as two videos contributed to the 2021 STEM for All Video Conference. In addition to contributing to knowledge in the field, these initiatives will be critical to informing our decisions about where to focus our efforts post-COVID to help schools leverage the opportunities for innovations created by the pandemic.

Some of our long-term research projects have also been repurposed this year to focus, at least partially, on responding to the pandemic. This was the case for our NSF-funded Noyce projects, where we developed new professional learning experiences related to the pandemic for the participants, with support from two supplements to our original grants. The annual CHLOE Report was also modified this year to collect information about responses to and implications of the pandemic for higher education institutions.

As a result of the intensive professional development offered by the LiDA Center around remote teaching during the pandemic, we believe that the UR community as well as K-12 schools in the region are now much more aware of what we can do to support their future efforts towards leveraging technology. We also hope that the online materials we created, combined with publications and our presences at multiple conferences, will contribute to increasing our visibility both nationally and internationally.

Accomplishments unrelated to the pandemic

Other major long-term research projects have continued to progress this year — most notably a study of youth digital literacy in Indonesia, the East Irondequoit case study, and the *Bullying Education through Literacy* project.

Special efforts were devoted to launching new collaborations around "Future of Work" – that is, implications of the digital age, and advances in Artificial Intelligence (AI) and data science in particular, on the workplace and workforce preparation. This is a topic that has great relevance for the future and has already attracted considerable funding at the federal level and beyond; we also believe that the LiDA Center can make significant contributions in this area.   Our greatest accomplishment this year was receiving a $150,000 planning grant from the National Science Foundation (NSF) *Future of Work at the Human-Technology Frontier* program to do an exploratory study of artist-technologists – individuals whose work involves both the arts and technology. While small, this prestigious grant has been very significant, as it initiated collaborations with a large group of faculty with complementary expertise across UR and RIT, and it has already led to two more grant proposals in this area. The first proposal involved a group of 25 faculty and staff across the University committed to work together to develop capacity for

4

interdisciplinary work around "Future of Work" and deriving implications for the preparation of students at the University of Rochester; while we did not receive the University Research Award we originally applied for, the project will be launched in Fall 2021 thanks to Warner Dean Sarah Peyre's commitment to match the in-kind contributions offered by all the other UR units involved – a testament to the recognized importance of this project. We also collaborated with a team from RIT to submit a $2.5M full research grant proposal to NSF, which is still pending.

We have also been working on other collaborative grant proposals – including (1) a recently awarded $100,000 pilot project to explore high-school students' perceptions of technology-rich alternatives to traditional residential colleges (in cooperation with RIT), (2) a pending $2.5M IES proposal involving a new application of machine learning to support student scientific inquiries, and an NSF proposal on cybersecurity education still in the works.

Very important for our Center's finances moving forward has been the award of two subcontracts from NYS Smart Grants, which will secure about $200,000/year for the next five years to support K-12 teachers' professional development, which will allow us for the first time to employ some freelancers to expand the reach and impact of our work.

Over the next year, we plan to continue our efforts in all of our on-going research projects, as well as launch new ones if awarded any of the grant proposals submitted this year.

PROGRESS MADE TOWARDS EACH STRATEGIC GOAL

GOAL #1a – *Increase the number of successful transformative LiDA initiatives, with a* **focus on providing support to specific innovative uses of technology for teaching and learning**

1. **UR Online Learning** *(Strategic Initiative D + F)*:
   PROJECT DESCRIPTION: In his role as Associate vice-President for Online Learning for the entire University, and with support from LiDA Center staff and others, *Fredericksen leads strategic efforts to promote and strengthen online learning across the UR.
   This academic year (Summer 2020, Fall 2020 & Spring 2021) was unique because of the pandemic. All Warner courses were offered online, and most courses across the UR had to be offered online or in a hy-flex format (i.e., with students having the option to join remotely via Zoom into classes taught in-person). Course evaluations for the 2020-21 academic year showed that student satisfaction did not change compared to previous years - if anything, they showed some improvement! The LiDA Center supported these efforts in the following ways, leveraging *Eric

Fredericksen's work as the University Associate Vice-President for Online Learning as well as LiDA Associate Director for Higher Education:

- *Fredericksen and **Lisa Brown offered 10 sections of a "condensed" version of our semester-long course on Designing Online Courses between May 2020 and August 2020 for UR instructors (serving a total of over 150 instructors). Another section was provided over the December-January break to professors in the Hajim School of Engineering to support their Spring 2021 courses. In addition to the formal Warner courses, workshops were offered on a weekly basis, and sometimes multiple times a week, on the use of specific tools -- *see Goal 1b for more detail*
- The LiDA Center offered additional complementary support to Warner instructors through a combination of ad-hoc individualized support and "Debriefing sessions" where Warner instructors could share their experiences teaching online were organized and facilitated by LiDA Center staff at key points throughout the year.
- The Educational IT Governance Committee, chaired by *Fredericksen (in his role as the UR Associate Vice-President for Online Learning) and comprising of representatives of all UR academic units (including *Raffaella Borasi and *Dave Miller), met regularly throughout the year to share information and inform instructional decisions across the University. This group also provided important input and guidance on the migration of the University LMS from on-premise to the cloud over the winter break.

2. **K-12 Digital Consortium** *(Strategic Initiative C):*
PROJECT DESCRIPTION: The LiDA Center is offering some leadership and infrastructure support in the initial stages of the **K-12 Digital Consortium**– a collaboration between the LiDA Center and K-12 school districts in the Rochester region interested in transforming teaching practices by leveraging digital technology.
Given the unique stress imposed by the pandemic this year, we suspended our regular meetings and Kick-Off Events, and instead reached out individually to most district "liaisons" to better understand their situation and offer support as needed. We also invited educators in Consortium schools to participate in our LiDA Colloquium Series to be part of the dialogue around implications of the pandemic we were facilitating, and also made them aware of any professional learning opportunities their districts could benefit from.

3. **Noyce Master Teacher Fellows (MTF) Digitally-Rich grant project** *(part of Strategic Initiative C)***:**
PROJECT DESCRIPTION:This 5-year $3M grant from NSF is preparing 20 math and science "master teachers" to provide leadership in 7 high-need districts engaging in technology innovations (which are all part of the K-12 Digital Consortium). Each MTF will complete an Advanced Certificate in Digitally-Rich Teaching in K-12 Schools and an Advanced Certificate in Teacher Leadership at Warner (for a minimum of 42 credits per MTF) *(see* program description*)*. This project was launched in collaboration with the Center for Professional Development and Education Reform in summer 2018; the leadership team consists of **Callard (as PI), *Borasi, *Borys, **Carson, **Daley, Fluet, Kruger, Martin, *Miller, **Occhino and Staloff.
While continuing to pursue the main goals of this project, this year also called for some modifications to respond to the pandemic:

6

- *(also Strategic Initiative F)* We offered special summer professional development to prepare Fellows for high-quality remote teaching in their classrooms, including "experiencing as learners" an inquiry around COVID.
- We made some adjustments in the required courses and experiences originally planned for this year to help our Fellows better respond to the pandemic; this included engaging them in a course on Counseling & Communication Strategies in Fall 2020 and a course on Diversity & Equity in Spring 2021, and focussing our monthly Leadership Seminar in supporting the development of their leadership identity as well as their remote teaching.
- *(also Strategic Initiative F)* The pandemic was a catalyst for some of our Fellows to take initiative to support their colleagues as "emerging teacher leaders"; some of these experiences have been documented on a [3-minute video](#) prepared for the 2021 STEM for All Video Conference.

4. **COVID-19 supplement for our Noyce Master Teacher Fellows Phase II (MTF2) project** *(Strategic Initiative F)*:
PROJECT DESCRIPTION:This is a 6-month supplement awarded in summer 2020 to support COVID-19 related activities to another NSF-funded Noyce Master Teaching Fellowship program (which pre-dated the founding of the LiDA Center, and was focused on STEM instruction more generally). The original grant was awarded in summer 2015 to prepare 14 math and science "master teachers" for urban high-need schools. The team working on the supplement consists of *Borasi, *Borys,**Callard, *Miller and **Occhino.
As this 5-year NSF grant was coming to an end when the pandemic hit, we requested a $52,000 supplement from NSF to (a) do some additional professional development focused on remote teaching in Summer 2020 (led by *Borasi & *Miller) and provide mentoring support during the school year (by *Zenon Borys and **Michael Occhino), and (b) create and make publicly available some online materials to support K-12 teachers' remote teaching (see [supplement proposal](#) for more detail). Nine MTF2 fellows volunteered for these additional experiences, and used them to support specific innovations in their teaching practices; three of these experiences have been documented in another [3-minute video](#) prepared for the 2021 STEM for All Video Conference. The [online materials](#) some of these fellows produced to share their lessons learned has been publicly posted on k12digital.org, the K-12 Digital Consortium website.

5. **AccelerateU Online Learning Coordinators initiative:**
PROJECT DESCRIPTION:The LiDA Center has been supporting AccelerateU *(an organization within Wayne Finger Lakes BOCES that acts as a clearing house and support for online high school courses in the region)* in developing a cadre of "Online Learning Coordinators" (OLCs) – an emerging new role within K-12 school districts, intended to support high school students taking online courses -- as part of a 2018-2021 New York State Learning Technology Grant (NYS LTG).
In this third and last year of the grant, *Miller continued to support this project as a consultant.   In response to the new needs generated by the pandemic, an amendment to the original grant also funded the LiDA Center to design and offer a fully online professional development (PD) program for K-12 teachers to better prepare them for remote teaching in summer 2020 -- see goal #1b for more detail on this component of the grant.

6. **Supporting remote teaching at East during the pandemic** *(Strategic Initiative F)*:
PROJECT DESCRIPTION: In May 2020, the East EPO reached out to the LiDA Center for support in preparing their leadership team to make key decisions for the 2020-21 school year and planhing their summer professional development for teachers.
*Borasi collaborated with Susan Meier (in her role as East Chief Academic Officer at the time) to submit a [grant proposal](#) to the Spencer Foundation as part of a special call for proposals to support schools during the pandemic. While the grant was not awarded (more than 200 applications were received for this solicitation!), the LiDA Center agreed to provide the planned professional development component of that grant pro-bono, and to be available for support as needed. In May-June 2020, all 17 East teacher leaders as well as 12 East school leaders participated an intensive professional learning experience that included both synchronous and asynchronous work (designed and facilitated by *Borasi and Meier, with the support of *Borys, *Miller and **Occhino). Additional one-on-one support was provided by *Borys to three East math teachers who also opted to participate in the Noyce MTF2 supplement. These experiences were instrumental to decisions made about the coming year and the summer professional development for teachers scheduled for August 2020, as reported in a presentation delivered at the 2020 NYSCATE conference (a [recording of this presentation](#) is available).

7. **"COVID Connects Us" unit** *(Strategic Initiative F)*:
PROJECT DESCRIPTION: In response to the pandemic, in Summer 2020 **April Luehmann collaborated with graduates from her Get Real! Science program (including four Noyce Scholars who previously graduated and had teaching positions) to develop a very [innovative science unit](#) around the science of COVID, which she also designed to be used as a start-of-the-year unit setting expectations and practices promoting equity. She reached out to the LiDA Center for help in seeking external funding to support the implementation and study of this unit, as well as further expansions.
*Borasi supported **April Luehmann's submission of three grant proposals to support her piloting the implementation of the "COVID Connects Us" unit in several classrooms - a [supplement](#) to our current NSF Noyce Scholarship grant ($50,000; awarded); a Greater Rochester Area Foundation grant (~$75,000, awarded); and an NSF DRK12 research grant (~$1,500,000; awarded).

8. **Bullying Education through Literacy**
PROJECT DESCRIPTION: This project, funded by the Moskowitz Family Foundation, focuses on providing teachers with online supporting materials and information to fight bullying in school using literacy. Started in 2018 with **Carol St.George as the PI, after a year the project pivoted to pursuing their original goal through a rich website that would make the materials created easily accessible to everyone. *Borasi and *Han, as well as other research assistants, are part of this project team.
In the period covered by this report, the team has continued to produce and post new materials for the [website](#), including an introductory video and links between the "Bullying Cards" and related books included in a different section of the website.

9. **Reading2Babies**
PROJECT DESCRIPTION: This project, also funded by the Moskowitz Family Foundation with additional support from the Rosenwald Foundation, aims at increasing literacy development in young children, starting at birth. Started in early 2020, and involving a collaboration with the UR OBGYN department, this project involves the creation of another website to disseminate materials and

This project was officially launched in October 2020. So far we have begun the collection of books and other information about early literacy, began a video project following a new mother's reading to her baby, and are designing a first draft of the website.

10. **Online AP Music Theory course by Eastman**
PROJECT DESCRIPTION: The Eastman School of Music wanted to design and offer a high-quality fully online AP Music Theory course for high school students, led by **Venturino.
*Miller supported **Stephanie Venturino in the design of this course as part of a multi-semester independent study that started in 2020. *Venturino successfully complete the design of the course, which was approved by the College Board as meeting all the requirements to count for AP credits. The course was offered for the first time this year, enrolling a total of about 30 students across the nation. *Borasi and *Miller also facilitated a connection with *AccelerateU* to advertise the course broadly in the region.

GOAL #1b – *Increase the number of successful transformative LiDA initiatives,* with a focus **on preparing high-quality online and blended instructors**

1. **New graduates from Warner LiDA advanced certificates:** In this time period, 12 students completed the Advanced Certificate in Online Teaching and 6 students completed the Advanced Certificate in Digitally-rich Teaching in K-12 Schools (see our up to date [list of LiDA Advanced Certificate graduates](#))

2. **Courses on digitally-rich teaching:** High-quality training in blended and/or online teaching was provided through the following graduate courses taught at Warner *(see [brief descriptions](#) for each of these LiDA courses)*, which were all initiated and/or (co)designed by LiDA staff - for a total of 985 semester credits of instruction in the 2020-21 academic year:
   - EDE410: Learning in the Digital Age *(*Lammers)* (F20=10)
   - EDE420: Introduction to Video Production for Education Research *(**Textor)* (not offered this year)
   - EDE421: Introduction to Video Editing for Education Research *(**Textor)* (not offered this year)
   - EDU446: Entrepreneurial Skills for Educators *(*Miller)* (Su20=45; Sp21=16)
   - EDE470: Topics in Online Teaching *(for UR faculty only)* *(**Brown)* (Su20=32)
   - EDE471: Topics in Online Course Design *(for UR faculty only)* *(*Fredericksen)* (Su20=32)
   - EDE472: UR Faculty Online Course Development *(for UR faculty only)* *(*Fredericksen)* (Su20=54; *Sp21=8*)
   - EDU481: Integrating English & Technology *(Rosen+)* (Su20=7)
   - ED482: Teachnology & Higher Education *(*Fredericksen)* (not offered this year)
   - EDU483: Integrating Mathematics & Technology *(Rosen+*Borys)* (Su20=7)
   - EDE484A: Digitally-Rich Teaching & Learning in K-12 Schools *(**M.Daley)* (F20=18)
   - EDE484: Online Teaching & Learning *(Instructor: **Brown)* (Su20=7; F20=5; Sp21=4)
   - EDE486: Designing Online Courses *(*Fredericksen)* (Su20=9; F20=5; Sp21=11)
   - EDU481: Integrating Science & Technology *(Rosen+**Luehmann)* (Su20=10)

- EDF488: Online Teaching Practicum *(*Fredericksen & **Brown)* (Su20=4; F20=6; Sp21=5)
- EDF490: K-12 Digitally-Rich Teaching Practicum *(**M.Daley & *Miller)* (14 students for the year)
- EDE492: Integrating Technology in Teaching Content Areas *(Rosen)* (Su20=2)
- EDU497: Teaching & Learning in Higher Education & Health Care Settings *(*Borasi & *Miller)* (Su20=15; F20=51)
- EDU499: Integrating Social Studies & Technology *(Rosen)* (Su20=4)
- *EDE545: Leadership Seminar in Digitally-Rich STEM Teaching *(**Callard, **M. Daley & **Occhino)* (21 students for the year)
- ED567: Designing Research in Online Space *(*Lammers)* (not offered this year)

NOTE: Noyce MTFs, who took some EDF490 credits plus EDE545, contributed 75 of these credits, plus also took an additional 126 credits in other non-LiDa courses *(see Goal 1a, #3 for more information about this project).*

3. **Professional development [PD] for K-12 teachers:** This year, all the PD we offered was focused on supporting teachers with remote instruction, as most schools had to move at least some of their instruction online:

   - *(Strategic Initiative F)* Intensive PD (equivalent to about 16 hours) on online teaching practices supporting remote teaching and strategies to redesign lessons for remote teaching was offered to 17 East teacher leaders (as well as 12 school leaders). *(led by *Borasi & Meier, with support of *Borys, *Miller & **Occhino)*
   - *(Strategic Initiative F)* As part of the already mentioned NYS Learning Technology Grant awarded to AccelerateU, the LiDA Center offered a 2-day equivalent PD on leveraging online learning for remote teaching. This PD was offered four times in Summer 2020, to a total of over 150 teachers *(with *Borasi as lead facilitator, and *Miller & *Borys as co-facilitators)*. A narrative account of this experience has been posted on our LiDA website.
   - *(Strategic Initiative F)* A 3-day equivalent PD on remote teaching was offered as part of the Noyce MTF2 supplement to 9 STEM teacher leaders who had just completed the originally planned 5-year program *(with *Borasi as lead facilitator, and *Miller, *Borys & **Occhino as co-facilitators)*.
   - *(Strategic Initiative F)* A 3-day equivalent PD on strategies for remote teaching was offered as part of the Noyce MTF-DR project to the 21 fellows participating in this program. *(with *Borasi as lead facilitator, and all the other members of the leadership team as co-facilitators)*

4. **Professional development [PD] for higher education [HE] instructors:**

   - *(Strategic Initiative F)* More than 40 free 1-hour workshops were offered by *Fredericksen and **Brown (each attended by 20-40 participants) throughout the year - see complete lists for: Summer 2020, Fall 2020, January 2021, Spring 2021
   - *(Strategic Initiative F)* In Summer 2020, *Borasi offered a 2-part workshop on using long-term projects as assessments in online teaching to 12 UR faculty/staff - *see recording for Part 1*

10

- *(Strategic Initiative F)* A special PD series was offered by *Borasi and *Miller to support for the redesign of the set of K-12 Leadership courses to be offered fully online in summer 2020 (8 participants)
- *(Strategic Initiative F)* *Jayne Lammers offered a webinar hosted by Universitas PGRIS Semarang, Indonesia on "Overcoming fatigue, stress, and challenges in online teaching" (7 December, 2020; participants: 72 in Zoom + YouTube live stream)

5. **Support to the redesign of EDE492: Integrating Technology in Teaching Content Areas** *(Strategic Initiative F)*: *Borasi, *Borys and *Miller collaborated with doctoral student Rebecca Rosen, as she was tasked with redesigning and teaching fully online this required course for all pre-service teachers at Warner in Summer 2020. The course was redesigned to include a major component about strategies for remote teaching, to prepare students teachers who would need to do their practicum during the pandemic - but we expect this component will remain a part of the course even post-COVID-19, to prepare future teachers to possible emergency school closures.

6. **Noyce Digitally-Rich Scholarship grant project:**
PROJECT DESCRIPTION: This 5-year $1.2M grant from the National Science Foundation [NSF] provides full scholarships to a total of 29 pre-service math and science teachers who also complete an Advanced Certificate in Digitally-Rich Teaching in K-12 Schools and commit to teach for at least two years in high-need schools after graduation. This project *(see brief description)* was launched in Spring 2018; the leadership team includes Choppin (as PI), *Borasi, *Borys, **M.Daley, and *Miller.
In addition to securing the already mentioned supplement for the "COVID Connects Us" unit, major accomplishments this year included:

   - 4 of the 5 cohort1 scholars are teaching science in high need schools in the area, and they all participated in the "COVID Connects Us" unit project.
   - 6 cohort2 students completed their program in Summer 2020; 5 of them started teaching in high need schools.
   - 6 cohort3 students started their program in Summer 2020 and are planning to complete their program in Summer 2021.
   - x cohort4 students were recruited this year and are scheduled to start their program in Summer 2021

GOAL #1c – Increase the number of successful transformative LiDA initiatives, with a focus on **influencing educational leaders' decision-making about digitally-rich innovations**

1. **Collaboration with Warner K-12 Leadership program:** Andrea Cutt and Holly Manaseri, directors of Warner K-12 Leadership preparation program have reached out to *Borasi and *Miller to help them add a new focus on digitally-rich

11

and remote teaching throughout the K-12 leadership preparation program they direct.

2. **PD for East EPO school leaders** *(Strategic Initiative F)***:** As mentioned earlier, 12 school leaders participated in the PD provided at East on remote teaching in summer 2020 *(led by *Borasi & Meier)*; these administrators included the two principals of the Lower and Upper schools within East, and their new Chief Academic Officer.

<mark>**GOAL #2a.** *Advance LiDA scholarship, with a* focus on **studying transformative uses of technology for teaching and learning**</mark>

1. **Scholarship around the consequences and implications of the pandemic for K-12 schools** *(Strategic Initiative F)***:**

   - Highlights of the East EPO experience with remote teaching, including the professional learning and mentoring provided by the LiDA Center, were reported in a 2020 NYSCATE presentation (a [recording of this presentation](#) is available):
     - Borasi, R., Meier, S., & Borys, Z. (November 2020). Redesigning instruction for remote teaching: Leveraging online learning and teacher leaders, NYSCATE Annual Conference

   - *Miller conducted a series of 25 Zoom conversations with school leaders within the K-12 Digital Consortium to better understand their experiences during the pandemic; preliminary findings were reported in another 2020 NYSCATE presentation (a [recording of this presentation](#) is available):
     - Miller, D.E., Borasi, R., & Borys, Z. (November 2020). *K-12 Digital Consortium: Lessons Learned about Leveraging Technology During Emergency School Closure.* NYSCATE Annual Conference .

   - *Miller and Cutt have received approval from the UR Research Subject Review Board to start a more formal follow-up research study with K-12 principals to better understand their experiences during the pandemic, and the implications of these experiences moving forward.

2. **Scholarship around the consequences and implications of the pandemic for higher education** *(Strategic Initiative F)***:**

   - During this unique time period, Fredericksen conducted studies of graduate and undergraduate students at the University at the end of the Spring 2020 semester and then again at the end of the Fall 2020 semester related to their experiences with emergency remote teaching and online learning.

- *Borasi and *Miller, along with co-authors Richard DeMartino (RIT) and Nathan Harris (Warner), completed the writing of an accepted [book chapter](#):
  - Borasi, R., DeMartino, R., Harris, N., & Miller, D. E. (2021). Could COVID-19 be a Catalyst for Disruption in Higher Education? In R. Chan (Ed.), *Global Higher Education*. Routledge.

- *Borasi was an invited Keynote for the "Special Lecture Series on Governance of First-Class Universities and China's Education Modernization 2035", Wuhan University, Wuhan, China (Sept.2020); she presented on *"The Power of Strategic Planning: Preparing Universities for a Post-COVID-19 Era"*

3. **CHLOE Report:**
PROJECT DESCRIPTION: *Fredericksen has been one of the author of the annual report on the state of online education in higher education since 2018.
In addition to the [CHLOE 5 report](#) about the national pivot last spring that was published in July 2020, this work led to the following presentations in the period covered by this report:
- OLC Accelerate - November 2020
- OLC Innovate - March 2021
- Numerous webinars and briefings
The CHLOE team also conducted the CHLOE 6 study in Spring 2021 regarding the efforts of U.S. colleges and universities in the Fall 2020 semester. This national report will be published in early June 2021. These national studies and reports are covered widely in the higher education press and media and cited frequently.

4. **Future of Work at the Human-Technology Frontier projects** *(Strategic Initiative D)***:**

- **Developing UR Capacity to Competitively Engage in Future of Work Projects**
  PROJECT DESCRIPTION: Recognizing the importance of Future of Work projects for the future of the UR (and other higher education institutions), we are trying to develop an interdisciplinary team of faculty and staff across the UR that will work together to develop the needed cross-disciplinary expertise and collaboratively pursue external funding opportunities.
  Building on the networking and structure developed the previous year to apply for a 2020 University Research Award to support this kind of institutional capacity-building work (which was not processed, as the program was put on hold due to the pandemic), *Borasi led an even larger team for a similar application to the 2021 University Research Award program (see excerpts from the [application](#) for more information). While this project did not receive a 2021 URA, it will be launched in 2021-22 with minor modifications, as the directors of the units involved agreed to provide the promised in-kind resources they had committed at the time of

the application 9and often more!), and the dean of the Warner School offered to contribute the remaining matching funds.

- **NSF Future of Work Planning Grant on Artist-Technologists**
PROJECT DESCRIPTION: This 1-year $150,000 planning grant from the National Science Foundation [NSF] supports the exploratory work of an interdisciplinary team of 27 UR and RIT faculty and staff around artist-technologists' creative design at the human-technology frontier - with an initial focus on music (as the artistic domain) and Artificial Intelligence and Augmented/Virtual Reality (as main technologies) (see public abstract). The project team includes *Borasi (as PI), *Borys, Harris, Judge, *Miller, **Peyre, and **Xu from Warner.
Since its start in September 2020, the Core Team has conducted over 25 "customer discovery" interviews of artist-technologists and began to identify several key challenges and opportunities for this occupation, as well as possible follow-up studies and interventions that could become part of a future research proposal for the NSF Future of Work program.

- **NSF Future of Work Research Proposal on Machinists' Tacit Knowledge**
PROJECT DESCRIPTION: If awarded, this 4-year $2.5M project will leverage Artificial Intelligence to improve the preparation of future machinists, with the special focus on supporting their development of the *tacit knowledge* that makes expert machinists especially valuable, yet cannot be easily taught (see the proposal abstract for more detail). The project team includes *Borasi (as co-PI), *Borys, Judge, *Miller, and **Peyre from Warner, as well as another UR faculty and six RIT faculty.
*Borasi and *Borys were part of an interdisciplinary team including RIT faculty that met weekly to prepare this grant proposal, and also conducted some pilot interviews in the process.

5. **Study of new technology-rich post-secondary options and factors affecting their adoption** *(Strategic Initiative F)*
PROJECT DESCRIPTION: A team of faculty from RIT College of Business led by Richard DeMartino and the UR Warner School of Education (*Borasi, *Miller, Harris and Rubenstein) have come together to better understand the new post-secondary education options currently available given the advances in online teaching technologies, along with the factors affecting their adoption. This study will also take into consideration how the situation may have been changed due to how high school students experienced online learning during the pandemic.
After submitting grant applications to various foundations for the past two years, RIT was finally awarded a $100,000 grant from the Charles Koch Foundation in February 2021 to conduct a pilot study focusing on secondary students and their influencers' perceptions about alternatives to traditional college (and the changes that may have occurred due to the pandemic), with special attention to how this may affect their post-secondary education decisions (see excerpts from the proposal for more detail). The study, titled "Moving Towards the Tipping Point: Exploring Shifting Demands for New Higher Education Approaches Post-COVID-19," will involve about 120 interviews with students (and their influencers) from three different schools serving a high percentage of disadvantaged students - East, Greece Arcadia and Honeoye. We just got approval from RIT Human Subject Board for this study, so interviews are scheduled to start shortly.

6. **Research on youth digital literacy**:
PROJECT DESCRIPTION: Lammers has been studying youth digital literacy in the United States and in Indonesia, as a means of theorizing global meaning making through digital practices and to inform educators about how youth leverage technology for their own interest-driven learning. Over the period covered by this report, *Lammers' research on this topic has generated the following publications and presentations:

- Lammers, J. C., & Astuti, P. (2021). Calling for a global turn to inform digital literacies education. *Journal of Adolescent & Adult Literacy, 64*(4), 371-377. https://doi.org/10.1002/jaal.1103
- Lammers, J. C., & Astuti, P. (2021, April). Indonesian secondary students' agentic digital literacies: Expanding the national narrative towards empowering literacy education. Paper presented in the *Digital Literacies for Global Meaning Making: Learning from Four Cases from the Global South* symposium at American Educational Research Association annual meeting. [virtual].
- Lammers, J. C., Astuti, P. (2020, July). Exploring the digital literacies of Indonesian youth. Paper presented at Australian Association of Teachers of English/International Federation of English Teachers conference, Sydney, Australia.
- Lammers, J. C. (2020, July 8). *Digital texts: Harnessing the power of new platforms in a post-truth world.* Panel discussion at Australian Association of Teachers of English/International Federation of English Teachers conference, Sydney, Australia.
- Lammers, J. C. (2020, September 9). *Empowering digital literacy to inform education: Lessons from Indonesian youth.* Virtual plenary talk given at 6th International Conference on Science, Education, and Technology, UNNES, Semarang, Indonesia.

7. **Research on leveraging the potential of digital literacy in schools**:
PROJECT DESCRIPTION: For the past decade, *Lammers has been conducting research on students' engagement in fanfiction and other powerful digital literacies, and deriving implications for English Language Arts/Literacy classrooms.
*Lammers work on this topic generated the following publications and presentations in the period covered by this report:

- Marsh, V.L., Conroy, E., & Lammers, J. C. (R&R - resubmitted). Repositioning students as change-makers: 5 steps to advocacy research. *English Journal.*
- Lammers, J. C., & Magnifico, A. M. (2021, April). Working with living texts: Building an argument for play in secondary ELA instruction. Roundtable presented at American Educational Research Association annual meeting. [virtual].
- Marsh, V. L., Lammers, J. C., & Conroy, E. (2021, April). Literacies of power: Expanding youth advocacy in English class. Paper presented at American Educational Research Association annual meeting. [virtual]. iPresentation available here.
- Lammers, J. C., & Magnifico, A. M. (2020, December). Designing teacher professional learning for digital literacies: Revealing opportunities and tensions. Paper presented in the *Navigating Fandom Transliteracies in Classroom Spaces: Implications for Equitable Instruction* symposium at the Literacy Research Association annual conference [virtual].
- Lammers, J. C., Bacalja, A., McGraw, K., & Beavis, C. (2020, July). Digital literacies informing classroom practice: If only. Presentation at Australian Association of Teachers of English/International Federation of English Teachers conference, Sydney, Australia.
- Noguerón-Liu, S. & Lammers, J. C. (2020). Literacy instruction and digital innovation: Trends and affordances for digital equity in classrooms. In E.B. Moje, P.P. Afflerbach, P. Enciso, & N.K. Lesaux (Eds.) *Handbook of Reading Research Volume V* (pp. 406-423). Routledge.

8. **Implications of machine learning for scientific inquiry and science education**:
   PROJECT DESCRIPTION: Since early 2019, *Borasi, *Miller, and **M.Daley have collaborated with Computer Science faculty **Zhen Bai to explore how machine learning may provide new ways to generate as well as to test hypotheses as part of scientific inquiry – and the implications this may have for how we teach about scientific inquiry in schools and college. This work is intended to leverage and complement ML-powered learning environments **Bai has been developing to make the use of machine learning more accessible to students with limited math and coding background.
   During the period covered by this report, the following progress has been made:

   - The book chapter the team worked on for over a year will soon be available in print:
     - Daley, M., Bai, Z., Borasi, R., & Miller, D. E. (2021). Machine Learning – a new lens for integrating computational thinking in science. In P. Short (Ed.), *Cultivating a Scientific Mindset in the Age of Inference.* Information Age Publishing.

   - A 3-year grant proposal was submitted in February 2021 to the U.S. Department of Education Institute for Educational Studies (IES) to develop and study a new "AI pedagogical agent" (named "CuriDATcity") that would support high school students scientific inquiry facilitated by the use of *SmileyClusters* - a learning environment previously developed by **Bai and her team that enables students to use machine learning clustering algorithms to make sense of large sets of multi-variable data *(see [project summary](#) for more information)*. If awarded, this grant will contribute more than $850,000 to support the LiDA component of this project.

9. **Case Study of the East Irondequoit digital conversion.**
   PROJECT DESCRIPTION: The East Irondequoit Central School District has been a pioneer in the Rochester region, since it started its journey towards digital conversion in 2012 under the leadership of Superintendent Susan Allen and Chief Information Officer Joe Sutorius. The LiDA Center has committed to conduct a case study of this experience, as a way to document key decisions made, challenges encountered, and lessons learned that could benefit other districts embarking in similar 1:1 initiatives.
   The proposal for a book chapter focusing on the roles and preparation of teacher leaders at East Irondequoit throughout their digital conversion has been accepted for including in an edited book about teacher leadership. A [first draft of the chapter](#) (co-authored by *Miller, *Borasi, *Borys, **Callard, **Carson, and **Occhino) has been submitted in April 2021.

10. **LiDA-related doctoral dissertations**: In this section we are listed all "active" UR Ph.D./Ed.D. dissertations on topics related to LiDA, where either the student is part of the LiDA community, or at least a member of the dissertation committee is a LiDa staff or LiDA community member:
    - Aliedim, Riham, *Can We Walk a Mile in Our Patients' Shoes? A Mixed Methods Study on the Educational Potential of Immersive Virtual Reality in Empathy Training for Medical Students*

(committee: ** Peyre [co-chair], *Borasi [co-chair], DeAngelis, Nofziger) - proposal to be defended in June 2021

- *Borys, Zenon, *Teachers' Curriculum Practices in the Digital Age (committee: Choppin [chair], Hursh, Otten)* - proposal defended in 2019

- **Carson, Cynthia, *Coaching from a Distance: Exploring Coaching Practices of Video-based Online Coaches (committee: Choppin [chair], Luehman, Roth-McDuffie)* - proposal defended in 2019

- **Comstock, Keirah, *ESOL Teachers' Technology Integration While Working with ITLs (committee: *Lammers [chair], Ares, TBD)* - proposal expected to be defended in 2021

- Duan, Xueyan, *Investigating language learning opportunities provided by out-of-school online EFL courses for Chinese K-12 students (committee: *Borasi [chair], Shang-Butler, Osburgh)* - proposal to be defended in June 2021

- *Han, Yu Jung, *Extramural English in an Affinity Ecology: Intersecting Spaces for Interest-driven English Learning (committee: *Lammers, Curry, Rebecca Black - UC-Irvine)* - proposal defended in December 2019

- Schneider, Erin, *Hilton Central School District and the Need for Positive Digital Citizenship Skills: A Decision Analysis Dissertation (committee: *Fredericksen [chair], Uebbing, Clark)* - dissertation defended in March 2021

- **Textor, Kristana, *Motivation and Minecraft: A Mixed Methods Study on Digital Recreations of College Campuses During the Covid-19 Pandemic (committee: *Lammers [chair])* - proposal expected to be defended in 2021

- Buholtz, Kim. *A Program Evaluation of the University of Rochester Medical Center Simulation for Operating Room Safety Program* (*committee: Kawakyu-O'Connor, **Peyre, *Miller*) - proposal defended 10-02-2020.

- Bello, Meghan. *How Can the Gates Chili Central School District Increase Effective Use of Instructional Technology? A Decision Analysis Dissertation (committee: Uebbing, *Miller, Zaffuts*) dissertation defended 3-17-2021.

- Frederick, Susan. Simulation in an Advanced Practice Nursing (APRN) Program: Can it be Transformational? (*committee: **Daley, *Miller, Kirchgessner*) - dissertation defended 7-17-2020.

GOAL #2b. *Advance LiDA scholarship, with a* focus on **leveraging digital technologies to more effectively disseminate new knowledge**

11. **LiDA Center website** *(part of Strategic Initiative B)*:

- **Redesigned LiDA Colloquium Series page:** As the format of LiDA Colloquia this year was redesigned to be offered as 1-hour Zoom session, we recorded these sessions and redesigned the LiDA Colloquium Series page to include links to the following documents for each session - as a way to enable interested people to benefit from these events even when they may not have been able to attend the live session:
  - Flier with detailed information
  - Google doc "Navigator" for the session
  - Video recording of each "conversation starter" (4-5 minutes each)

17

- - Video recording of the final sharing from breakout room discussions
  - A **new LiDA eModule** to support teachers' development of "High-Leverage Teaching Practices for Remote Teaching" ([eModule](#)) was created and posted. This eModule includes a diverse set of online resources (including short videos, interactive web pages, text documents, etc.), along with suggestions about different possible uses. The eModule was created by *Borasi, with input from *Miller and *Borys, and support by *Yu Jung Han to create and post the online materials; funds from the MTF2 supplement contributed to this initiative.

12. **Lessons learned reported on [K12digital.org:](#)** The redesign of the K-12 Digital Consortium's website purposefully included sections where lessons learned from the field can be reported using multi-media. This year we added a section with lessons learned from the pandemic contributed by MTF2 fellows in a page dedicated to *[COVID-19 K-12 Resources](#)*. We experimented with a format which includes a short video clip as a "teaser," plus links to online materials created by the teacher with the support of LiDA staff.

13. **Other innovative dissemination products:**
    - Contributed two 3-minute videos to the NSF 2021 STEM for All Video Conference:
      - "*[Lessons Learned by STEM Master Teachers from the Pandemic](#)*" - reporting on the experiences of selected MTF2 fellows who participated in the supplement *(produced by *Borasi & *Miller; created and edited by *Han)*
      - "*[STEM Master Teachers Emerging as Leaders during the Pandemic](#)*" - reporting on the experiences of selected MTF-DR fellows who took on early informal leadership roles during the pandemic *(produced by *Borasi & *Borys; created and edited by *Han)*

---

14. **GOAL #2c.** *Advance LiDA scholarship, with a* **focus on developing research** methodologies **to effectively and ethically make use of digital data**

---

1. **Developing research methods to study learning in online spaces**
   PROJECT DESCRIPTION: *Lammers, along with other colleagues and Warner students, has been working on identifying methodological and ethical issues presented by conducting educational research in online spaces, and also offering some solutions and research innovations.

   During the period covered by this report, *Lammers, and her colleagues Magnifico (University of New Hampshire) and Curwood (University of Sydney) presented to the [Society for Qualitative Inquiry in Psychology](#) about the methodology they developed: "Affinity Space Ethnography: Exploring

Qualitative Methods for Studying Online Spaces" [Session information and recording available](#)

<mark>GOAL #3. Achieve visibility for LiDA Center's work</mark>

---

1. **Awards and other recognitions:**
   - *Borasi was invited to join the UR Goergen Institute for Data Science (GIDS) as a Faculty Affiliate starting in Fall 2020
   - *Borasi was invited to join the UR Goergen Institute for Data Science (GIDS) Director's Advisory Board in Spring 2021

2. **Publications, presentations and internet presence:**
   - This year, LiDA staff have produced a total of 4 **publications** and 19 **presentations**; in addition to those listed elsewhere in this annual report,these also included:
     - *Borys, Z., *Han, Y.J., & *Carson, C. (2021). Geeking out over tech tools: Sharing ways tech tools help grad students do grad school. Presentation at Annual Warner School's Doctoral Student Peer Support Association (DSPSA) Conference, virtual.

     - *Borasi, R. (2021). Teaching Remotely: A Pedagogical Perspective. Presentation at the 2021 International Forum on Teacher Education (IFTE-2021), Kazan.

     - *Fredericksen, E. (2021). Experiences of the University of Rochester during Times of Disruption. Presentation at the 2021 International Forum on Teacher Education (IFTE-2021), Kazan.

   - **[LiDA Center website](#):** Between April 1, 2020 and March 31, 2021, website traffic included 2246 unique users for 3540 sessions and 6794 page views.
   - **[K12digital.org](#)**: Between April 1, 2020 and March 31, 2021, website traffic included 608 unique users for 767 sessions with 1410 page views.

3. **LiDA staff's participation in conferences and events:**
   - 2020 Audio-Engineering Society Applications of Machine Learning in Audio *(*Borasi)*
   - 2020 ASU+GSV Virtual Summit *(*Borasi; *Miller, *Borys)*
   - 2020 NYSCATE conference *(*Borasi; *Borys; *Miller)*
   - 2020 Frameless Symposium *(*Borasi, *Borys)*

- *2020 OLC Accelerate (*Fredericksen)*
- *2021 OLC Innovate (*Fredericksen)*
- 2020 Association of Internet Researchers conference *(*Lammers)*
- *2020 Literacy Research Association conference (*Lammers)*
- *2021 American Educational Research Association annual meeting (*Lammers)*
- *2021 Stanford HAI Conference (*Borasi; *Miller)*
- 2021 DSPSA Conference *(organized by the Warner Student Association) (*Borasi; *Borys; *Han; *Lammers; *Miller)*
- 2021 STEM for All Video Showcase *(*Borasi; *Borys; *Han; *Miller)*
- Kazan 2021 *(*Borasi; *Fredericksen)*

4. **Contributions to increasing the LiDA Center's visibility within the University of Rochester**:
   - *Fredericksen has organized several well attended activities and events in his dual role as **Associate Vice-President of Online Learning** for the entire university.
     - In Fall 2020, the University of Rochester Online Learning Symposium Series highlighted the great work by University of Rochester faculty through three themed events:
       - Experiences with Online Learning by faculty in the Health Science - October 14
       - Experiences with Online Learning by faculty in the Humanities - October 28
       - Experiences with Online Learning by faculty in STEM - November 9
   - *Borasi is now an affiliated faculty of the UR Goergen Institute for Data Science (GIDS), and also a member of GIDS Advisory Board
   - The 6 LiDA Colloquia were advertised across the University of Rochester through @rochester (the UR daily e-newsletter).
   - The NSF Future of Work planning grant, led by LiDA Director Borasi, involves 26 team members across the University, with representatives from Eastman School of Music, College of Arts, Science and Engineering, Georgen Institute of Data Science, Ain Institute for Entrepreneurship, and Greene Center for Career Education and Connections.

5. **Contributions to increasing the LiDA Center's visibility in the region:**
   - *Borasi and *Miller have continued to play a leadership role in the **K-12 Digital Consortium** (currently involving 24 school districts and 3 BOCES in the region).

20

- *Miller's interviews of K-12 principals to learn from their experiences during the pandemic have strengthened connections with each of these school leaders
- *Borasi was interviewed for an article about implications of the pandemic for K-12 schools for OnBoard, the online publication for the New York State School Board Association (see: ON BOARD)

6. **Contributions to increasing the LiDA Center's visibility nationally and internationally:**
    - *Fredericksen was appointed as Associate Editor of the Online Learning Journal, a top research publication in the field of online education. (Sept. 2020)
    - *Fredericksen continued to serve on the Board of Directors of OLC, the Online Learning Consortium, the premiere national organization focused on online learning.
    - *Borasi was invited to serve as a reviewer for LiDA-related NSF grant applications
    - *Lammers keynote in Indonesia: Lammers, J. C. (2020, September 9). *Empowering digital literacy to inform education: Lessons from Indonesian youth.* Virtual plenary talk given at 6th International Conference on Science, Education, and Technology, UNNES, Semarang, Indonesia.
    - *Borasi's invited keynote at Wuhan University (Sept.2020) - see goal #2a
    - *Borasi and *Fredericksen presentations at the International Forum on Teacher Education (IFTE-2021) held in Kazan, May 2021

7. **LiDA Communication Plan** *(Strategic Initiative B)*: While creating a comprehensive LiDA Communication Plan was put on hold this year (as the pandemic created different priorities for our staff time and resources), we continued to use the LiDA website and our Twitter account as a vehicle to share valuable resources and lessons learned.

GOAL #4.Create a vibrant and collaborative "LiDA Community"

---

1. **LiDA Colloquium Series**
    PROJECT DESCRIPTION: Featured LiDA program aiming at creating opportunities for sharing and dialogue about topics related to learning in the digital age for educators across fields.
    This year, the pandemic caused us to rethink the format of these events so they could be offered remotely - as well as made us decide to leverage these events to share lessons learned from the pandemic.

- **Redesigned fully online format**: We redesigned the format of each LiDA Colloquium as a 1-hour Zoom session, where 4-5 "conversation starters" would briefly present (usually for 4-5 minutes each), followed by small group discussions in breakout rooms facilitated by a LiDA staff or LiDA Community member, who would then briefly report highlights from the conversion to the large group. We also created a "Google doc Navigator" for each session, where we provided additional information related to the session, and captured selected contributions from the participants. Offering these sessions via Zoom allowed us to easily record them, and then post the conversation starters and reports from the breakout rooms on our website. This new format made the LiDA Colloquium accessible to many more people - and we plan to continue it moving forward.
- **Fall 2020 season**: During the Fall 2020 season, 141 people registered and 116 attended the following sessions.
  - *What RESOURCES can our LiDA Community offer to support educators during the pandemic?*
  - *How can we best address EQUITY ISSUES raised by the pandemic for education?*
  - *What LiDA LESSONS LEARNED could we take with us beyond the pandemic?*
- **Spring 2021 season**: During the Spring 2020 season, 139 people registered and 91 attended the following sessions.
  - *Maslow Before Bloom: Balancing Learning with Other Needs during the Pandemic*
  - *Leveraging Digital Access to Informal Learning Spaces*
  - *Which Online Learning Opportunities Should Continue to Be Offered Post-COVID?*

2. **Growth in LiDA community members:** Reached a total of 45 current members (as listed in the [LiDA Community page](#) on the LiDa website).

3. **Active LiDA Working Groups this year:** The following working groups (and individuals identified in parenthesis) have been meeting regularly and/or working on unfunded collaborative projects over the current year:

   - **Cybersecurity Education** *(*Borasi; *Borys; Peizhao Hu - RIT; Dana Dachman-Soled - University of Maryland)***:** After collaborating on a first NSF EAGER proposal on cybersecurity education which was not funded, this year the team has met weekly to work towards an NSF grant proposal on the same topic.
   - **Disruptive Technologies and Higher Education** *(*Borasi, *Miller, Harris & DeMartino-RIT)* **:** After writing several grant proposals to support the study

that was eventually funded by the Charles Koch Foundation, the members of this study group are now meeting bi-weekly along with the larger team involved in the funded grant project.

- **Machine Learning and Scientific Inquiry** *(**Zhen Bai, *Borasi, **Michael Daley; *Miller)***:** The team worked together to complete the book chapter and to write the grant proposal submitted to IES, as mentioned earlier.
- **(NEW) RIT Future of Work group**: As described in more detail as part of goal 2a, *Borasi, *Borys and doctoral student Qinqin Xiao participated in the development of a Collaborative research proposal to the NSF Future of Work program.

4. **Other on-going active collaborations:** The following existing collaborations were maintained and/or expanded:
   - [AccelerateU](#) *(an organization within Wayne Finger Lakes BOCES that acts as a clearing house and support for online high school courses in the region):* (an organization within Wayne F BOCES): Continuing to work on the 3-year NYS Learning Technology Grant awarded in 2019.

5. **New collaborations:** New collaborations were explored with the following individuals/groups:
   - [Warner's Doctoral Student Peer Support Association (DSPSA)](#) (a self-organized student group for Warner doctoral students): Following the presentation given by *Borys, *Han, and **Cynthia Carson at the first DSPSA Conference held in February 2021, *Lammers' is leading a collaboration on designing events to support doctoral students along their academic program, especially as it relates to the use of digitally-rich learning.
   - Dr. Cesare Wright (President of the Kino-Eye Center for Visual Innovation): Following a connection made by Deans Peyre and Heinzelman, *Borasi, *Borys and *Miller have been exploring possibilities for collaboration, and recently invited Dr. Wright to join the team designing professional development around the new NYS Computer Science and Digital Fluency Standards for one of the NYS Smart Start grants scheduled to start in Summer 2020.

==GOAL #5. Assure the resources needed to sustain and expand the Center's work and its impact==

---

1. **New LiDA staff positions:**
   - **Assistant Director:** This was the first year the Center benefited from having a full-time LiDA Assistant Director. A grant from the Schultz Family Foundation in 2019 allowed us to first pilot this position with advanced doctoral students,

and then establish this new clinical faculty position. Zenon Borys was hired starting on January 2020 on a part-time basis, but moved to full-time since July 2020. Supporting the LiDA Assistant Director position on a full-time basis has been made possible through a combination of grants and contracts, and paid services to the Warner School to complement the original gift.

- **LiDA Fellowship "pilot"**: A gift from the Scandling Family Foundation in 2020, furher renewed for 2021, enabled us to launch a new LiDA Fellowship, intended to fund an advanced doctoral student to contribute to special projects within the LiDA Center. Yu Jung Han has been the first recipient of this fellowship in the 2020-21 academic year, and will be continuing in this role for the 2021-22 academic year.

2. **Partnership with the Center for Professional Development and Education Reform:** The LiDA Center and the Center for Professional Development and Education Reform (CPDED) have already collaborated in a number of ways in the past, most notably around the NSF-funded Noyce Master Teaching Fellowships; over the last year, however, we have strengthened and formalize our partnership by:

- Establishing a regular monthly meeting involving most of the staff of the two Centers working in K-12 education, to share lessons learned from working with K-12 schools and discuss new opportunities;
- Working on developing common rates for key services provided to K-12 schools, and practices to fairly distribute revenues from collaborative projects;
- Jointly applying for selected grants and contracts that can benefit from our complementary expertise; this year, this involved the contracts for providing professional development under state grants to the Greater Southern Tier (GST) BOCES and the Wayne Finger-Lakes (WFL) BOCES *(see below for more details on these projects)*

3. **LiDA Center staff working on unfunded infrastructure and core initiatives**:

- LiDA Director (R. Borasi): 10% FTE
- LiDA Associate Director for Higher Education (E.Fredericksen): 5% FTE
- LiDA Associate Director for K-12 Education (D. Miller): 5% FTE
- LiDA Associate Director for Informal Education (J. Lammers): 25% summer
- LiDA Assistant Director (Z.Borys): 40% FTE
- LiDA Fellow (Yu Jung Han): 30% FTE
- Additional RA support:
  - Erqian Xu: ~6% FTE (5 hours/week)

4. **Personnel working on funded LiDA initiatives**:

- **LiDA Staff:**

24

- *Borasi: 12% FTE on Noyce MTD-DR grant; 10% July-Dec.2020 on NSF Noyce MTF2 supplement; 2% Jan.-June 2021 on Noyce Scholarship supplement; 3% on NSF Future of Work planning grant; 10% on Moskowitz Foundation grants; + co-teaching 3 LiDA courses, directing HPE program and supervising LiDA dissertations *(covered by Warner)*
- *Fredericksen *(besides his role as Associate Vice-President for Online Learning for the University, covering 80% of his time)*: 5% FTE on supporting online teaching at Warner + teaching LiDA courses & supervising online teaching practicum, directing Online Teaching program and supervising LiDA dissertations *(all covered by Warner)*
- *Miller: 15% FTE on Noyce MTD-DR grant; 5% July-Dec.2020 on NSF Noyce MTF2 supplement; 5% on Moskowitz Foundation grants; 5% on K-12 Consortium *(covered by mini-grant);* + teaching 2 LiDA courses & digitally-rich practicum supervision, directing Digitally-Rich Teaching program & program advisor for Digitally-Rich Teaching and Online Teaching programs, supporting Warner faculty online teaching and supervising LiDA dissertations *(covered by Warner)*
- *Lammers: teaching a LiDA course + supervising LiDA dissertations *(covered by Warner)*
- *Borys: 20% FTE on Noyce MTD-DR grant; 12% July-Dec.2020 on NSF Noyce MTF2 supplement; 5% on NSF Future of Work planning grant; + Teaching section of LiDA course *(covered by Warner)*
- *Han: ~5% FTE on Moskowitz projects
- **Other personnel** *(for a total of 3.45 FTE)***:**
  - **Erqian Xu (RA): ~5% FTE on Moskowitz projects
  - **Anlun Wang (RA): ~5% FTE on Moskowitz projects
  - **Brown: Teaching 3 LiDA courses & online teaching practicum *(covered by Warner)*
  - **Callard (Center for Professional Development and Education Reform - CPDER) : on Noyce MTD-DR grant and NSF Noyce MTF2 supplement
  - **Carson (CPDER): on Noyce MTD-DR grant
  - Jeff Choppin: on Noyce Scholarship grant
  - **Daley (CPDER): on Noyce MTD-DR grant; + HPE Program advisor + teaching 1 LiDA course
  - **Luehmann: on Noyce Scholarship grant and supplement
  - **Stephanie Martin: on Noyce MTD-DR grant
  - **Occhino: on Noyce MTD-DR grant and NSF Noyce MTF2 supplement
  - **Melissa Staloff: on Noyce MTD-DR grant
  - **Jen Kruger: on Noyce MTD-DR grant
  - **St.George: on Moskowitz projects
  - Lauren Warner: on Noyce MTD-DR grant
  - RAs on AR/VR mini=grant

Faculty and staff outside of Warner:
5. **Free lancers:** This year, we have not been in a position to hire any free-lance

6. **New gifts secured to support the LiDA Center's infrastructure and unfunded core initiatives:** A total of about $86,000 in gifts has been received to date during the 2020-21 fiscal year to date, including the following contribution directed to support specific core initiatives and positions:

   - Support for the LiDA Assistant Director position
   - Support for the 2020 and 2021 "LiDA Fellowship"
   - Support for the LiDA Colloquium Series
   - General support for the LiDA Center's infrastructure and unfunded initiatives

7. **New grants and contracts**:

   - Finalized the **contract for Year 3 of AccelerateU NYS Learning Technology grant** for a total of $8,000.
   - Awarded a 1-year **Future of Work planning grant** from the National Science Foundation for the project entitled "Exploring Creative Design at the Human-technology Frontier Through the Emerging Artist-technologist Occupation" – Future of Work at the Human-technology Frontier planning grant (award #2026439; Sept.2020-Aug.2021; $150,000)
   - Awarded a new grant **for the project "All About Babies" from the Moskowitz Family Foundation** (received first payment of $50,000, plus an additional gift of $50,000 from the **Rosenwald Foundation**)
   - Awarded a fourth year extension **for the project "Bullying Education with Literacy" from the Moskowitz Family Foundation** ($150,000)
   - In collaboration with the Center for Professional Development and Education Reform, secured contracts for professional development from two NYS Smart Start grant, for a total of about $300,000/year for the next five years (pending renewed funding each year)

8. **New grant proposals submitted** (and their status):

   - Spencer Foundation- East teacher leaders project *($50,000) - DECLINED*
   - Moskowitz Family Foundation: new Reading2Babies grant *($50,000 from Warner + $150,000 to Med Center) - AWARDED*
   - Moskowitz Family Foundation: Year 4 extension of the *Bullying Education through Literacy* grant *($150,000) - AWARDED*
   - Charles Koch Foundation: Tipping Point project let by RIT *($100,000) - AWARDED*
   - 2021 University Research Awards: Developing capacity for Future of Work grants ($75,000) *- DECLINED, but funded by other sources*
   - IES: CuriDATcity (~$2.5M, of which~$850,000 for the LiDA Center) *- PENDING*
   - NSF: Future of Work - Collaborative Research with RIT (~$2.5M, of which ~$850,000 for the LiDA Center) *- PENDING*
   - NYSED: new Learning Technology grant through the Greater Southern Tier BOCES (~$100,000/year for CPDER & LiDA Center) *- PENDING*

9. **Developing Warner doctoral students' capacity** *(Strategic Initiative E)*:
   - As part of *Lammers's Indonesian research group, Yadi Zhang served as a research assistant in charge of organizing the group's work across multiple digital platforms. Yadi Zhang, **Keirah Comstock, Beilei Guo, **Xueyan Duan, and Ismet Hi Karim apprenticed on Lammers's project to develop skills in reviewing literature, qualitatively analyzing data, and writing for publication. Guo also contributed quantitative analysis support to the project.
   - **Anlun Wang served as a research apprentice with Lammers and her co-PI Alecia Magnifico (University of New Hampshire) on the fanfiction teacher learning study, learning qualitative coding techniques, developing greater understanding of new literacies theory, and learning social practices related to publication.
   - **Erqian Xu has completed a 2-semester research apprenticeship with *Borasi in the context of the "Artist-technologists" Future of Work planning grant
   - **Qinqin Xiao has completed a 2-semester research apprenticeship with *Borasi in the context of preparing the "machinists' tacit knowledge" Future of Work proposal with RIT
   - **Erqian Xu and **Anlun Wang have received training on website and video editing work from *Yu Jung Han
   - *Zenon Borys, *Yu Jung Han and *Cynthia Carson presented at the virtual conference organized by the Warner Graduate Students Association in February 2021, sharing digital tools they found especially helpful for their research and teaching.
   - **Erqian Xu and **Qinqin Xiao have been admitted to the Advanced Certificate in Data Science (starting Summer 2021)