

Destination Area Quarterly Update

**Compiled by the Office of the Vice Provost for
Learning Systems Innovation and Effectiveness (LSIE)**

August 2019

In an effort to communicate the achievements and ongoing work of Virginia Tech's transdisciplinary research and education communities, the Office of the Vice Provost for Learning Systems Innovation and Effectiveness (LSIE) circulates a quarterly update to the Virginia Tech community. Further information about the nine thematic stakeholder groups can be found at: https://www.provost.vt.edu/destination_areas.html

OVERVIEW

- The work that is emerging from Virginia Tech's transdisciplinary communities is receiving regional, national, and global attention. The communities have participated in and led proposals that have been submitted to the NSF NRT program, NSF ERC program, USDA, and NIH. The LSIE Office is working with these groups to provide funds to assist with proposal development.
- The recent university strategic plan placed transdisciplinary research and learning at the center of the university's ongoing and future initiatives. For further information, please see: <https://strategicaffairs.vt.edu/StrategicPlanning/vtdiffabb.html>
- Research and teaching highlights have been featured regularly in VT News. Many of these stories highlight grants that have been awarded to varying transdisciplinary communities and this information can be found at: https://www.provost.vt.edu/destination_areas.html.
- This coming year Creativity and Innovation (C+I), Equity for Social Disparity in the Human Condition (ESDHC), Material and Economical Sustainability (ESM), and Policy will no longer be referred to as Strategic Growth Area (SGAs). Instead they will be referred to as Destination Areas (DAs). Going forward, Destination Areas, now reflects Virginia Tech's nine transdisciplinary thematic communities that were originally launched in 2016 as part of the university's [Beyond Boundaries](#) vision.
- In FY 2019-20, the Destination Areas will increase the broader impact of their research and learning efforts. The increased focus on external engagements among the nine DA communities reflects a key transdisciplinary value that will strengthen Virginia Tech's aims to become a critical global and local resource for tackling complex problems.

STUDENT EXPERIENCES

- **Transdisciplinary Undergraduate Experiences**
 - **Pathway Minor Updates:** New course pages have been developed to highlight a sample of the courses currently being offered through the DAs:
https://www.provost.vt.edu/destination_areas/da_courses.html
 - Adaptive Brain and Behavior (ABB): The ABB minor is working through governance.
 - Creativity and Innovation (C+I): This DA is sponsoring two minors. The Innovation minor has been active for over a year. The Creative Technologies + Experiences Pathways minor is in pre-governance.
 - Data and Decisions (DD): DD's minor is currently being launched.
 - Economical and Sustainable Material: ESM's minor is called, The Science of Stuff—Materials and Society, and it is currently moving through governance.
 - Integrated Security (IS): This DA's minor, Human Security, Securing Cyber, and Global Security, is anticipated to complete the governance review process in early fall.
 - Intelligent Infrastructure for Human Centered Communities (IIHCC): Their minor is currently under development.
 - **4VA-LSIE Curricular Funding:** The following DAs received 4VA funds to support their curricular efforts. Outcomes will be shared at a spring symposium on the Virginia Tech campus.
 - **Data and Decisions** -The DA received funding to support the implementation of the DD minor. This includes funding for teaching support. It also includes support for the development of a training workshop that will help prepare faculty and a graduate student who will be working on the implementation of the minor this fall. Working with TLOS the workshop will also be turned into an online training modular that can be used in the future for onboarding new faculty and GRAs that want to teach in a transdisciplinary environment. The results of this work will be presented to 4VA partners who are working on related curricular projects at a spring symposium.
 - **Integrated Security** –IS received funding to support further development of the ISERC. The ISERC classroom provides a state-of-the-art simulation platform for furthering the curricular offerings of the DA pathway minors.
 - **Policy** –This DA received funding to finalize the development of their 4+1 STEP graduate certificate.
 - **MITRE AI Modular Grant** – The grants support the creation of transdisciplinary modules for curriculum on Artificial Intelligence (AI) that have been developed by faculty. The modules will contribute to a national repository being created by MITRE; an organization that has taken on a commitment to address workforce skills related to AI. Approximately 10 faculty grants will be awarded. The call for applicants

is currently open for spring 2020. Interested parties should contact Catherine Amelink, amelink@vt.edu.

- **Faculty Fellows Grants** –The grants are designed to further transdisciplinary learning and curricular research. An RFP for the fellowship will be circulated in early September and applications from interested faculty are due Oct. 15th. Information will be posted shortly on the DA website.
- **Pathway Minor STEM Grants:** The Office of Undergraduate affairs has provided funding to the following DA stakeholders. The grants support the development of pathway minors, including their implementation:
 - **Adaptive Brain and Behavior (ABB)** – the DA received funding to support instructor, GTA, and peer mentor stipends to scale the ABB Minor gateway course and support the development of the capstone. It will also support the advancement of the minor through governance. Stakeholder Mathew Komelski was the recipient of this grant.
 - **Data and Decisions (DD)** – stakeholder Michel Pleimling received funding to support the implementation of the DD minor, which is being launched in fall 2019. The grant covers costs for supporting advising and advertising expenses.
 - **Economical and Sustainable Materials (ESM)** – stakeholder Amanda Morris received funding to cover the salary of two instructors who are teaching courses that will be part of the ESM pathway minor. The minor is currently in governance and is anticipated to receive approval in early fall 2019.
 - **Integrated Security (IS)** – received funding for the curricular development of the minor, including summer salary for faculty and a GRA working on course design. Stakeholder Janine Hiller was the recipient of this grant.
 - **Intelligent Infrastructure for Human Centered Communities (IIHCC)** – stakeholder Katherine Albright received funding to support two years of teaching and administration work for a faculty member who is teaching three courses that have been implemented as special studies courses while the minor is being prepared for governance. Funding has also been used to support summer salary for faculty working on the design of the minor’s capstone course.
- **Transdisciplinary Graduate Experiences:** This fall the Policy DA is implementing a 4+1 certificate program called STEP (Science, Technology, and Engineering in Policy STEP Program: A Plus Policy Experience for Future STEM Leaders). The 15-credit program will be administered like an IGEP (Interdisciplinary Graduate Education Program) and will include a fellowship program. The program targets STEM majors and the first course for this program was recently launched in spring 2019. Currently, the curriculum leaders are working across existing curricular offerings to enhance content of this program. The LSIE Office will continue to work with the Graduate School to see how emerging transdisciplinary programs can complement the IGEP framework.
- **Student Experiential Learning:**

- **Oak Ridge National Lab (ORNL) Student Internships:** The ESM DA funded two summer internships and Jeremy Busby, the Director for Reactor and Nuclear Systems Division, matched these funds. This allowed four Virginia Tech undergraduates to spend the summer at ORNL where they conducted research. During their internship, students were assigned a mentor and a project to work on. At the end of the internship students either presented a poster or wrote a paper. Later this fall the interns will present a 15-minute summary of their research and overall experience at ORNL to the ESM DA stakeholder committee and VT faculty advisors. In terms of the feedback from ORNL, it was very positive. For instance, the feedback that Jeremy Busby provided described the students as being “top notch.” Moreover, all four students worked hard, were self-motivated and made significant accomplishments on their project.
- **Creativity and Innovation DA Gateway course:** *Play to Make Art 1114* is being taught by Tacie Jones. This course introduces students to techniques of transdisciplinary collaboration so they can identify global problems and opportunities that require creative skills across multiple disciplines. Students collaboratively engage through inclusive play: brainstorming ideas, tinkering with software and materials, and embracing alternative and diverse worldviews. This semester, students will complete a series of projects inspired by C+I faculty-led workshops and field trips. Fall 2019 workshops include digital sound with electronic prototyping, photogrammetry, game design, digital video and sound editing, videogame engines, photography, data visualization, painting, projection mapping, and more.

RESEARCH EFFORTS

- **Transdisciplinary Research:** The building of a dynamic transdisciplinary research community is a central aim of the Destination Areas initiative. As noted at the start of this update, this year the DAs will focus on furthering the broader impact of their work by supporting research that focuses on external engagement. LSIE is collaborating with SEAD on several projects to aid this work.
- **Research Outcomes:** The LSIE office is currently collecting data concerning the outcomes of previously funded transdisciplinary research projects. While this data is still under review, early indicators include several major grant applications and joint publications. Solutions to complex problems are currently being explored in convergent areas such as rural health, infectious disease, coastal mitigation, brain health and development, and security.
- **Collaboration Incubator:** The workshop was held on August 21st and was led by Patty Raun, Carrie Kroehler, and Daniel Bird Tobin from the Center for Communicating Science (CCS). The design of the workshop focused on developing collaboration techniques among faculty and staff who are interested in developing transdisciplinary research projects and strengthening communities at Virginia Tech and beyond. Support for this event is being provided by Institute-Destination Areas Seed Grant initiative 2018-

19. Further information about the CCS can be found at:
<https://communicatingscience.isce.vt.edu>

UNIVERSITY-WIDE PROGRAMMING

- **Transdisciplinary Programming:** Since the last Quarterly Update, there have been several campus-wide, transdisciplinary programs. Programming efforts have been posted on the Provost's website, distributed on interest lists that are cultivated by the DA stakeholder groups, and shared with the DA cluster hires. This includes:
 - **Fall Kick Off Event** – on September 20, 2019 LSIE will host a Destination Areas Fall Kick Off. The event will introduce the strategic goals of the DAs, including several new transdisciplinary seed grant initiatives. The event is open to the campus community. Interested parties should RSVP at:
https://viriniatech.qualtrics.com/jfe/form/SV_5iq3YgBKzzB9yN7

Attachments

- Fall kick off flyer