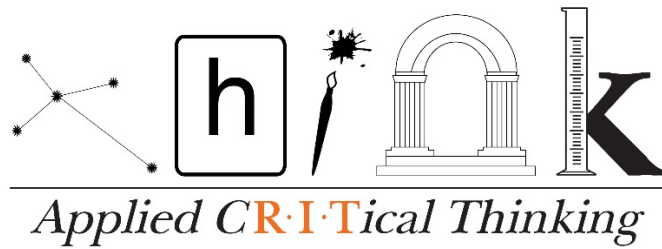


The Annual Report for Applied Critical Thinking at RIT

for

2016-17



Dr. Jennifer L. Schneider, CIH

Eugene H. Fram Chair in Applied Critical Thinking

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Executive Summary

The upward trajectory of the applied critical thinking initiative at RIT continued in 2016-17 under the leadership of Dr. Jennifer Schneider, most notably with increasing engagement and integration of the effort on the Rochester campus. External and internal engagement accomplishments include establishment of the Fram External Advisory Board, a social media presence in Facebook and Twitter, a new student-directed introductory video, and a partnership with University News as part of an expanding external outreach effort. The internal curricular efforts include three applied critical thinking experimental courses, an updated information literacy rubric and implementation of an argumentation rubric. Significant campus engagement resulted from fourteen events, Fram signature and collaborative programming, and the beginnings of a faculty/ staff community of practice. The number and breadth of ACT special events increased from 8 to 14, and participation increased 20% year over year despite competition for faculty and student time. In addition to the regular applied critical thinking programming at RIT, more than 600 participants actively engaged in specific Fram opportunities over the course of the academic year.

Introduction

This report outlines the annual accomplishments and activities related to the Applied Critical Thinking (ACT) initiative at the Rochester Institute of Technology (RIT). This effort is lead and the report is compiled by the Eugene H. Fram Chair in Applied Critical Thinking (Fram Chair), Dr. Jennifer L. Schneider, CIH. In addition to her role as the Fram chair, Dr. Schneider is also a professor in Civil Engineering Technology, Environmental Management & Safety within the College of Applied Science & Technology at RIT, and leads the Collaboratory for Resiliency & Recovery @ RIT. She specializes in HAZMAT, Risk Based Decision-making and Global Resilience. Dr. Schneider is advised by both internal and external advisory boards, and supported half time by Ms. Angela Brodie.

Aims

Applied Critical Thinking is a core component of our vision to provide a leading-edge program for the skilled, adaptive and forward-thinking professional of the future. Critical thinking is an integral part of our curriculum and the overall student experience at RIT. The need for this type of education has never been greater as the ‘perfect storm’ awaits today’s graduate: the evolution of technology, changing career constructs, and flattening of many organizations, requires employees who can make an immediate and increasing contribution within a complex environment. Technology is moving at a rapid pace and changing our relationship with our world, what our communities look like, and how our businesses function. We must create a workforce and a society that can flourish in such a challenging environment.

Purpose

The purpose of this report is to provide a summary of the efforts and accomplishments related to ACT for this year, and to provide recommendations for future efforts and benchmarks for ongoing evaluation of our progress.

Building of a national reputation as a leader in Applied Critical Thinking relies upon university commitment coupled with a notable external contribution to the development of applied critical thinking. Achievement of these objectives will require a complete understanding of how RIT shapes critical thinking capability in its students, and the resulting evidence of exceptional outcomes. To ensure success, the university is (1) establishing a continuous improvement

process grounded in performance measures and student achievement assessment (2) continually seeking best practices and opportunities, (3) integrating high quality ACT across general education and program experiences for students, and (4) demonstrating results and contributing scholarship artifacts that are recognized internally and externally.

History

The Eugene H. Fram Chair in Applied Critical Thinking was funded in 2011 by an anonymous RIT alumnus to honor Professor Fram. Eugene Fram is a Professor Emeritus of Marketing who retired from RIT in 2008 after 51 years of teaching at Saunders College of Business. He is known for his expertise in the study of retail malls and shopping, Internet retailing, nonprofit and corporate governance, and advertising. Professor Fram received his Ed.D. in Higher Education from the State University of New York at Buffalo, his MS degree in retailing from the University of Pittsburgh, and served as the J. Warren McClure Research Professor of Marketing at RIT. Gene is the recipient of the 1997 Eisenhart Award for Outstanding Teaching and the RIT Presidential Medallion in 2008.

Dr. Clarence Sheffield served as the inaugural Fram Chair from 2012 to 2015, and laid the foundation for the effort, including establishing the first faculty advisory board, writing of the *Critical Thinking Across the Curriculum* report, adoption of general education student learning outcomes for critical thinking, engaging faculty and students through small group events and hosting of five speakers.

The effort was reorganized in 2015-16 with the appointment of Dr. Schneider. Major accomplishments in that year included seating of a faculty advisory board, creation of a strategic action plan, creation of a website, *Fram Focus* newsletter, examination of learning outcomes related to ACT, establishment of the Fram Award, and ten major events, including signature events over three days that featured Dr. Luis Amaral of Northwestern University. In 2015-16, Dr. Schneider was also supported part-time by Dr. Evelyn Brister of COLA, Philosophy, who created a new course in 'Responsible Knowing'. For the first time, Dr. Schneider composed the ACT annual report that summarized efforts and accomplishments.

2016-2017 Management & Structure of the Initiative:

Fram Advisory Board (FAB)

In August 2016, the Fram Advisory Board (FAB) membership was again confirmed by the college deans & directors. Most members from 2015-16 chose to remain on the board (Table 2). This board has representation from all colleges and student affairs at RIT. The duties of the board members are to guide ACT efforts and advocate for/be a conduit for ACT at RIT.

Table 2.

2016-2017 Fram Advisory Board			
Callie Babbitt Golisano Institute for Sustainability	cwbgis@rit.edu	2173 Sustainability Hall	5-6277
Heath Boice-Pardee Student Affairs	h.boice@rit.edu	2410 Student Alumni Union	5-2268
Corey Crane College of Health Sciences and Technology	cacihst@rit.edu	1662 Louise Slaughter Hall	5-4018
Roger Dube College of Science	rrdpci@rit.edu	2104 Carlson	5-5836
David Long College of Imaging Arts & Sciences	dllppr@rit.edu	2250 Gannett Hall	5-5724
Rachel Mazique NTID	rcmdls@rit.edu	2236 Liberal Arts Hall	585.206.7342 (video phone)
Les Moore Saunders College of Business	lmoore@saunders.rit.edu	1146 Brown Hall	5-6966
Sylvia Perez-Hardy Golisano College of Computing & Information Sciences	sphics@rit.edu	2311 Golisano Hall	5-7941
Patricia Poteat College of Applied Science & Technology	papism@rit.edu	1182 Ross Hall	5-5848
Colette Shaw Student Affairs	cmsldc@rit.edu	2462 SAU	5-2114
Brian Thorn Kate Gleason College of Engineering	bkteie.rit.edu	1596 J. Gleason Hall	5-6166
Larry Torcello College of Liberal Arts	lgtghs@rit.edu	1303 Liberal Arts Hall	5-2327

Fram External Advisory Board (FEAB)

Beginning in 2016-17, a Fram External Advisory Board was selected from RIT's notable alumni (Table 3). These board members bring an external viewpoint and guidance to the initiative. The prospectus and job description for these board members is located in Appendix 1. The current members serving 2 or 3 year terms (renewable) are:

Table 3

2017 Fram External Advisory Board
Jason Edwards Vice President of Category Leadership - Total US Grocery Pinnacle Foods Group LLC
Robert Jacoby Consultant to The Energy Industry Former Global Manager at Royal Dutch Shell
Ellen Moser Board of Directors Fundraising Committee Chairperson Brentwood Library Foundation
Daniel Norselli President & Publisher D&C Digital
Chris Petescia Chief Experience Officer Carrot Creative
William Standwill General Manager, International T2 Biosystems, Inc.
Chris Tanski, MD, MEd Assistant Professor of Emergency Medicine SUNY Upstate Medical University
Krista Vardabash KV Strategies

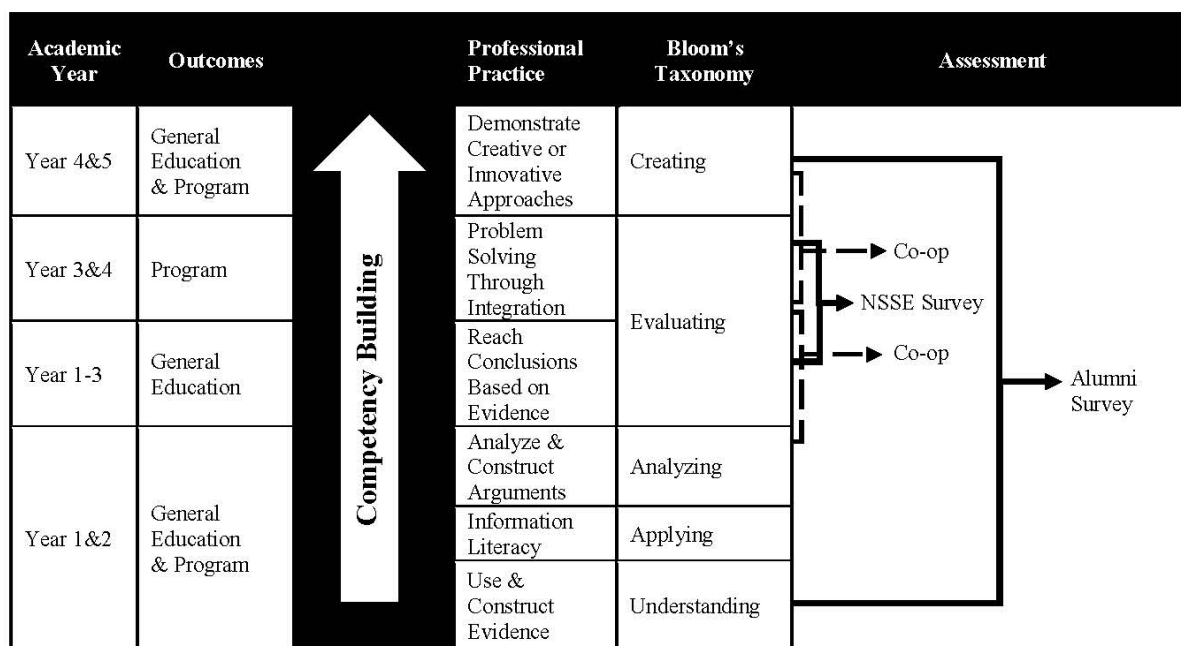
Defining Applied Critical Thinking at RIT

Definitions: Currently, there are at least four definitions for applied critical thinking at play at RIT. Further information can be found in Appendix 2. The FEAB recommends that establishing a single definition is not useful at this time, rather we should let the definition(s) evolve and possibly coalesce. It is important that we support the **growth of educated thinking** across RIT, which can be represented in many ways.

General Education & Program Student Learning Outcomes

The teaching and assessment of applied critical thinking at RIT is managed through a comprehensive general education and program strategy founded on student learning and program goals. The general education outcomes have been codified by the Gen Ed committee, and adopted. The abbreviated outcomes are listed in the professional practice column of the chart below because these inform the building of a competent professional and capable critical thinker. The full description of the ACT related outcomes are noted in Appendix 3. These ACT related outcomes are assessed as either general education within specific courses or program learning outcomes or as part of program learning outcomes through our own specific questions as part of cooperative employer feedback, as a result of RIT's participation in the National Survey of Student Engagement (NSSE), or more broadly within RIT's alumni survey. Both the cooperative employer survey and the NSSE survey have specific questions to assess the professional practice skills noted below in Figure 1.

Figure 1 – ACT Outcomes Map



Applied Critical Thinking Strategic Action Plan

The major goals for 2016-17 were the continuing implementation of a strategic action plan to operationalize ACT. This plan includes focus areas of creating engagement, pedagogy, scholarship and practice. 2016-17 is the second year of that three year plan, and the full plan will be updated in 2017-18, which coincides with other campus planning cycles, and the implementation of the major RIT T-shape graduate initiative in the RIT strategic plan, 'Greatness through Difference'. Critical Thinking is one of the major pillars of T-shape, along with communication and collaboration.

Highlights of Accomplishments in 2016-17:

Process:

- Formation of the Fram External Advisory Board of alumni leaders: Working with development the board was selected, invited and seated. The inaugural meeting of the board was held January 9, 2016 via a virtual meeting. The FEAB meets biannually (January and July) to provide guidance to the Fram chair. The prospectus and board job description is included in Appendix 1
- Creation of standard operating procedures and formats for Fram and ACT activities, particularly for the *Fram Focus* monthly newsletter, event and speaker management, budget forecasting, reporting and communication updates to the website and social media. This included the creation of a new logo, created by an RIT design alum, which is now featured on the cover of this report and in all of our communications
- Evaluation of course outlines and student learning outcomes for ACT: This included review of the 2000 courses typically taught annually on the Rochester campus and the 600 ACT designated Gen Ed courses. This major effort resulted in an analysis of the type and level of ACT in each course and degree program, and the extent to which the program fostered ACT. These results are available upon request.

Creating Engagement:

- Creation of a communication plan and website: We have seen over 100 mentions of ‘Fram’ related to RIT in news outlets, both local and non-local, and we have seen seventy-five specific mentions of ‘Critical Thinking’ at RIT in particular in news stories over the course of this past year. Implementation of the communication plan continued, with a completely revamped and structured website debuted in summer 2016 at: <http://rit.edu/criticalthinking> to complement the *Fram Focus* monthly newsletter. A ‘From Gene Fram’ section to the website and newsletter was added to highlight Dr. Fram’s thoughts and contributions. This was followed by a Facebook page and Twitter handle. Since their final implementation over the course of spring 2017, there have been 1,262 hits to the website, 790 hits to the Facebook page, and 708 Tweets and Retweets as of June 2017. A new partnership with University News created boilerplate response materials for other organizations. In addition, University News was a key partner in placement of ACT/Fram efforts in media. Further information on this effort can be found in Appendix 4.

A selected set of links to UNEWS stories is below:

<https://www.rit.edu/news/story.php?id=56652>
<https://www.rit.edu/news/story.php?id=59101>
<https://www.rit.edu/news/photoarchive.php?view=photo&datePhoto=2017-04-12>
<https://www.rit.edu/news/story.php?id=61939>
<https://www.rit.edu/news/story.php?id=60386>
<https://www.rit.edu/news/story.php?id=61541>
<http://www.cob.rit.edu/news/news.php?type=main&id=1792>
<https://www.goodcall.com/news/critical-thinking-011043>

- Signature events: The annual signature events of April 10 and 11, 2017 featured Dr. Ann Gates of the University of Texas El Paso, who is a noted computing and diversity scholar. In addition to her public events listed below, Dr. Gates also had meetings with selected faculty in GCCIS, Dean Anne Haake and with the RIT Advance team.
 - Signature dinner at RIT’s own Henry’s restaurant of our hospitality program for Dr. Gates with President Destler, Dr. Fram, and 20 members of the advisory boards, special guests, and student government representatives. The dinner was

also a student performance project for hospitality students in the College of Applied Science and Technology's Hospitality program

- CAST student poster session during the signature dinner meet and greet featured 11 student posters, and 23 students
- Graduate student workshop, 'Joining Forces: The Impact of Building Diverse Teams,' with 35 student attendees
- Faculty workshop, 'Research, Promotion, and the Practice of Interdisciplinary Work,' with 14 faculty attendees
- Signature lecture, 'Beyond Computational Thinking: Preparing for success in the innovation economy,' with 460 attendees in Ingle Auditorium
- GCCIS student and club poster session with 18 posters presented in concert with the post lecture reception in Fireside Lounge.

The post signature lecture reception also featured the new student-created [Fram ACT Introductory Video](#). This video was conceived and created in partnership with CIAS, with significant guidance from Dr. David Long (Film & Video) of the Faculty Advisory Board.

- Teachers on Teaching:
 - December 8, 2016, Dr. Lawrence Torcello presented the workshop ['The Uses and Abuses of Critical Thinking'](#) to 31 participants
 - March 22, 2017, Dr. Dina Newman presented the workshop ['Small Changes That Make a Big Difference'](#) to 25 participants
 - June 1, Dr. Newman, Dr. Johnson and Dr. Schneider presented a curriculum redesign workshop, 'Getting Students to Work Harder and Smarter: ILI/Fram Course Redesign Institute on Building Student Critical Thinking' to 19 participants. This kicked off a year- long partnership with faculty support with RIT's Innovative Learning Institute.
- Critical Thinking in a Crisis: Dr. Schneider presented a webinar for alumni relations on November 8, 2016.
- Executing Success: The Pivot Point: This panel, hosted in collaboration with RIT's Simone Center, featured three local entrepreneurs, Mr. Jerry Adamski, Mr. David

Chauncey, and Mr. Richard Kaplan, talking through their thinking challenges and triumphs on February 16, 2017, with approximately 45 students.

- Gray Matter: Two events were held in conjunction with RIT's discussion forum, 'Is Smart Technology Intelligent?' on March 3, 2017, and 'Truth' on March 24, 2017, which engaged approximately 21 participants.
- Graduate Education week collaboration: 'How thinking...' event featured five graduate students from design/arts, sustainability and architecture discussing their thoughts about how their professional and personal thinking has evolved in the course of their graduate studies with approximately 20 others in the innovation center.
- Fram Award for Excellence in Applied Critical Thinking at Imagine: Both small group and large group awards were given, and full descriptions are found in Appendix 5:

Small Group Award (Exhibit INS-1160): Ambio & Critical Thinking

Team: Julianne Burke, Josh Ladisic, Conner Hasbrouck, Jess Wiltey, Bennoni Thomas, Colton Woytas, Sudarshan Ashok, Vincent Lin

Large Group Award (Exhibit SUS-3260): Using Innovations in Technology to Combat Violence (Simulation & Behavioral Health: Meet Avatars/SimMan)

Team: Meghan Lewis, Alli O'Malley, Nicole Trabold, Cassandra Berbary, Lindsay Chatmon, Brittany St. Jean, Joshua Aldred, Akshay Kumar Arun, Anthony Perez, Karie Carita, Jason Chung, Keli DiRisio

Faculty, Staff & Community Industry Mentors: Dr. Caroline J. Easton (CHST, Professor/Researcher and PI); Dr. Richard L Doolittle (CHST, Professor/Faculty Researcher).

Pedagogy & Practice:

- Community of Practice & Exemplars: In 2016-17, we began a process of highlighting exemplar faculty and staff in the monthly *Fram Focus*, and placing those individuals on our [webpage](#). With this effort, we asked each to answer a standard set of questions and contribute their ideas of best practices to share with the community. This supports our emerging faculty/staff community of practice.

- Fram Faculty Fellow: In spring 2017, we released a posting for a part time Fram Faculty fellow position and received responses for consideration. We plan to announce the new faculty fellow in July 2017, who will be appointed on a year by year basis. See Appendix 6 for this posting.
- Student Learning Outcome Rubrics: Working with the assessment office, the rubric for *Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information* was updated. This student learning outcome (SLO) was initially part of communication and was initially applied in the first year writing course. This update broadens the applicability to other courses (for example, design of experiments, etc.). In addition, the SLO, *analyze or construction arguments considering their premises, assumptions, contexts and conclusions, and anticipating counterarguments* was piloted by a group of faculty. For more information see Appendix 3.
- Offering of experimental ACT courses: There are approximately 600 general education and many program ACT courses at RIT. This section highlights three experimental exemplars that were offered in 2016-17. Course descriptions are in Appendix 8. Results show that applied critical thinking can be developed and nourished as part of curriculum that spans departments and programs.
 - Year One course: Dr. Schneider taught this fall semester course with Dr. Boice-Pardee of Student Affairs, featuring concepts related to critical thinking in disaster
 - Graduate Salon: Dr. Schneider taught ‘Worldmaking’ with Dr. Engstrom (Philosophy) and Dr. Lousto (Mathematics). The graduate salon course was part of the provost office interdisciplinary curricula grant process
 - Meaning of Things course: Funded by a provost innovation grant, a diverse group of faculty created and piloted a course named, ‘Meaning of Things’ Dr. Schneider was delighted to provide guidance to the group in their development of assessment metrics. This course aimed to fundamentally impact student ability to think about objects in our lives and the way we attach meaning and significance to them. This course is certainly just one unique example of the teaching of applied critical thinking at RIT.

Scholarship:

- We began the process of assessing RIT's scholarly contributions in the area of applied critical thinking. This proved to be difficult because the majority of our efforts are part of our pedagogical efforts within the domains, not simply within critical thinking. We have anecdotal evidence, and will work to create better accounting in the future.

External efforts:

- RIT continued to engage externally in many efforts. We have begun making strides in creating external partnerships and reputation over the past year. These opportunities include MOOC course offerings, international and distance offerings, and university partnerships. RIT has cultivated a unique applied view of critical thinking that focuses on what it means to be 'career ready' today and in the future, our effort also distinguishes RIT from others on university landscape.

Integration with RIT's major initiatives

RIT is in the process of operationalizing a new university strategic plan, and the ACT at RIT initiative is explicitly highlighted in this plan. The importance of ACT in RIT's long term strategy is evident. Development of leaders and entrepreneurs requires fostering of complex visionary thinking that is grounded in ACT skills. Applied Critical Thinking is part of RIT's T-shape initiative and is a major component of student success and retention initiatives.

More information about our strategic plan and the integration of ACT can be found in Appendix 8.

Challenges

The ACT initiative at RIT faces challenges to overcome. As a key component of an RIT education, we still must continue to foster engagement of our own RIT community, through building top down and bottom up support. In addition, we must continue to build connections to our academic programs and disciplines as well as general education. This may be best accomplished through the fundamental problem structure and solving curricula that is an integral part of academic programs. Simply, there are many priorities and distractions on a college campus and it is difficult to emerge from the crowd of opportunities, particularly without a clear connection to the disciplines that attracted students to RIT. The educational and popular

literature paints a somewhat negative picture of today's college student's ability to think and focus beyond self, and that view does not make it easy to build a rapport and interest in students. Further, learning and practicing critical thinking is difficult, and takes time, and is resource intensive for faculty, student and class, requiring a significant commitment on the part of all and of the university itself. In RIT's case, the next steps will require commitment at the program level, at the college level and at the university level. To be truly integrated, it must be an expected *and* obvious part of each student experience, so that the students see and understand their role in building their own capabilities.

Opportunities

Applied Critical Thinking is part of the evolution of the RIT education. Our grounding as a career oriented university speaks directly to our commitment to critical thinking. We are a community that fosters both capability and innovation. We are doers and dreamers and ACT is a key skill for today and tomorrow's success. We embody a university that translates from theory to practice, dream to done, and we are building the structures, operations and expectations for *manifesting* applied critical thinking at RIT and beyond.

ACT Recommendations

Our efforts in applied critical thinking now give us the opportunity to make a significant impact both inside and outside of RIT. We have built the structures that will allow our effort to mature. The Fram Chair is ultimately responsible for the leadership of the ACT initiative by creating engagement with the whole community, increasing faculty, staff and especially student capacity to do ACT through education and furthering the student experience, and to contribute to our world through scholarship and critical thinking results. The goals for 2017-18 are focused on further integration of the effort into our core educational processes, continuous improvement of the Fram/ACT effort, and the growth and dissemination of ACT at RIT beyond the RIT community.

The major recommendations for the continued growth of ACT at RIT in 2017-2018 are listed below:

Process

- *Determine the path forward for integration into T-shape initiative*
- *Implement all the SOPs for events, budget and processes*
- *Lead the creation of the Fram Strategic Action Plan (for 2018-2021) that supports the RIT Strategic Plan by building of an operational, assessed and continuous improvement focused ACT effort*

Engagement

- *Foster an external and internal reputation and dialogue around ACT through an engagement and communication plan*
- *Grow the reputation of ACT at RIT through the hosting of impactful events designed to inspire the RIT community*
- *Create an external engagement strategy to share our model, best practices and generate a national conversation on the application of critical thinking*
- *Recognize and celebrate excellence (e.g. Fram award) in ACT at RIT, community of practice exemplars, etc.*

Pedagogy & Practice

- *Continue to facilitate the integration and cross pollination of ACT into corollary efforts, fostering a relationship and integration with the colleges and faculty and staff of RIT*
- *Assess the need for a ‘problem structure and solving’ program related student learning outcome and determine path forward based upon findings*
- *Benchmark or create performance and assessment metrics for ACT across programs, for leadership consideration*
- *Continue to foster a community of practice to share and increase our capabilities*
- *Design and implement a longitudinal assessment of an ACT student cohort*

Scholarship

- *Assess and foster future growth in RIT ACT related scholarship, and evaluate the opportunity to pursue additional external funding in the ACT arena to support this growth*

Conclusion

The applied critical thinking initiative at RIT has a solid footing positioned to become an integrative and yet forward-thinking presence at RIT and beyond. We must foster critical thinking to have effective and engaged citizens that can successfully face the challenges of our evolving world and create a compelling future.

Appendix 1 – Fram External Advisory Board Prospectus and Job Description

Prospectus

The Eugene H. Fram Chair in Applied Critical Thinking (ACT) was funded in 2011 through a generous donation by an anonymous RIT alumnus to honor Professor Emeritus Fram. Creation of this leadership position was the latest step forward in RIT's commitment to integrating applied critical thinking into an RIT education, and is a key component of our 2015-2025 Strategic Plan. The mission for Applied Critical Thinking is straightforward:

RIT will support and grow Applied Critical Thinking (ACT) by:

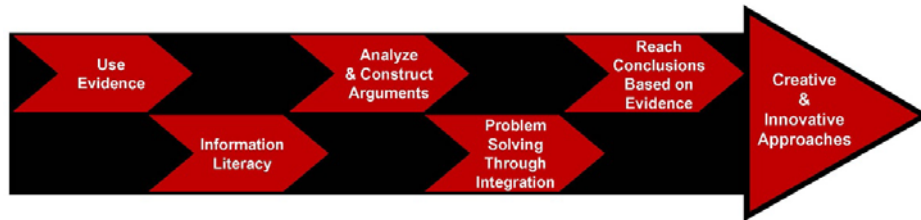
- Engaging with the whole community
- Increasing faculty, staff and especially student capacity in ACT
- Contributing to our world through our responsible thinking and quality scholarship

The ACT initiative is guided by an advisory board that gathers feedback from faculty, students and the community. We manifest this vision for ACT through regular events and programming, scholarly contributions, teaching, and learning throughout the student experience at RIT. In support of our mission, we:

- Teach 600 ACT courses annually, both general education and discipline specific, embedded in every major and from a student's first to last year.
- Measure student achievement in critical thinking student learning outcomes and student proficiency through cooperative employer assessments.
- Impact the whole community experience through co-sponsored events with Student Affairs (Gray Matter discussions), the Simone Center for Entrepreneurship & Innovation and RIT student government, etc.
- Require high quality experiential and applied learning opportunities for all students.
- Recognize demonstrated ACT excellence through the Fram Award, launched at the 2016 Imagine RIT: Innovation & Creativity Festival.
- Foster discourse by hosting some of the brightest minds across the ACT landscape, and contributing our own scholarship and expertise.

We have accomplished much and have more to do. We aspire to be the epicenter of Applied Critical Thinking, producing alumni that will thrive in our challenging and complex world, and be our next generation of thought leaders, makers and creators.

RIT's Applied Critical Thinking Learning Outcomes & Cooperative Employer Proficiency Assessments



Guiding Themes for 2016-2018:

Complexity: Critical thinking is key to mastery of the complex world we live in. We think critically in our effort to wrestle with complex issues and problems, through consideration of evidence and unknowns across disciplines and perspectives. We seek to understand before we can meaningfully shape our world.

Uncertainty: Life comes with no guarantees, and each decision we make should be informed by consideration of information and opportunities. This careful inquiry must also acknowledge what we do not know, cannot foresee, or that which may be misconstrued or misrepresented. Many times it is the unknown that drives the equation or the outcome, and critical thinking supports the ability to be thoughtfully skeptical, prepared, and yet open to unrealized possibility.

Creativity: Applied Critical Thinking at its best, allows us to reach forward and create an informed and better future, by understanding not only where we have been, but the challenges and opportunities before us. It allows us to learn, grow and manifest our best outcomes.

Fram External Advisory Board Job Description

Seeking External Advisory Board Members for Applied Critical Thinking at RIT

Opportunity:

The Eugene H. Fram Chair in Applied Critical Thinking (ACT) is seeking to seat a volunteer professional advisory board. This board is targeted at approximately five members, with an alumni majority. The ability to think critically is foundational to an RIT education, crucial to the professional success we seek for every alumni and linked to our university's responsibility to the community and our world. The inaugural board is expected to be seated by December 2016, initially meeting in mid-January 2017.

Duties & Requirements:

The duties of the board are to provide guidance to the ACT&RIT effort through review of the ACT Strategic Action Plan, current activities and accomplishments, and provide guidance for planning efforts. Members will be appointed on a three year, renewable, rotating basis. The inaugural board will have some members who serve two year terms to begin the rotation.

Activities of the board and its members:

- The board will review, meet and discuss efforts and plans in a less than 2 hour meeting twice per year with the Fram chair, (January and July) through a weblink or equivalent conferencing system. Materials will be provided to the board members by the Fram chair prior to these meetings to facilitate review.
- The board members will represent and support the ACT@RIT effort by being a conduit for reflecting current needs and trends for applied critical thinking in the workplace and the changing career landscape.

Please see the enclosed prospectus on the ACT@RIT effort. Further information can also be found on the RIT website at: <http://rit.edu/criticalthinking>. Questions should be directed to the current Fram chair, Dr. Jennifer Schneider, at jlwcem@rit.edu or 585.475.2092.

Appendix 2 – Definitions

There are currently at least 4 definitions of ACT at RIT. After consideration, the advisory board decided that there was not a need to select just one definition for all applications, and supported the notion that various views was not only appropriate but reflective of the wide impact of critical thinking:

1. **The RIT program essential outcome definition and a general education set of student learning outcomes definitions** (See Appendix 3),

Critical Thinking Across the Curriculum Report (2014):

2. **‘The ability to identify, analyze, construct, and evaluate evidence and arguments in a deliberate and rigorous way’ or ‘The growth of educated thinking’.** (C. Sheffield)

Rochester Engineering Magazine article (October 2015):

3. **‘RIT believed critical thinking to be so important that it established the Eugene H. Fram Chair in Applied Critical Thinking (ACT), to lead a university-wide initiative to build that competency through curricula, scholarship and the student experience. Critical thinking is accomplished by analysis of information to assess veracity and relationships; use of hypothesis and experimental results; application of multidisciplinary methods to support evaluation and possible creation of new ideas, products or views. Critical thinking also seeks to resolve weaknesses in thinking such as insufficient inquiry, ambiguity, unexamined assumptions, biases, and subjectivity.’** (J. Schneider, 2015)

Description of Fram Award for Excellence in Applied Critical Thinking at Imagine (2016):

4. **‘At RIT, ACT is an active form of engagement, drawing from our diverse domains and deep expertise to address the questions and challenges that we face. As the uncertainties and the magnitude of impacts increase in our complex world, we must now consider a wider range of possible outcomes. To do this well, we need to employ thinking that draws from multiple, diverse domains to more fully inform our evaluation and resultant strategies.’** (RIT website)

Appendix 3 – Learning Outcomes

RIT Essential Outcomes | Critical Thinking

Critical Thinking refers to those processes required to understand and evaluate complex claims of various sorts. It involves the evaluation of information, evidence, arguments, and theories, and the contexts in which these are encountered. It entails the questioning of different and competing perspectives, and challenging the (sometimes hidden) assumptions and inferences that determine what will count as evidence or argument. Critical thinking is learning to think in a disciplined and evaluative manner, to analyze and interpret the processes by which various claims are made and reliable conclusions are reached. (Source: RIT current Essential Outcome Definition)				
Data Sources	Academic Programs	Co-op Employer Evaluation 2013-14	NSSE 2013	Alumni Survey 2014
Measure and Results	100% of programs identified at least one program goal/slo Other: TBD	Critical Thinking: <i>Effectively solves problems by integrating a diverse body of knowledge and skills.</i> (n=3134) 4.1 out of 5.0 Met Information Literacy: <i>Accesses and synthesizes information from appropriate sources</i> (n=1461) 4.2 out of 5.0 Met	NSSE 4b <i>Applying facts, theories, or methods to practical problems or new solutions</i> Senior Approaching RIT 3.1, Carnegie Peer 3.2	Critical Thinking (n=~1350) Importance: 94% RIT Effective: 86% Gap Score: 8% Problem Solving (n=~1340) Importance: 97% RIT Effective: 90% Gap Score: 7 % Note: check to see if % are at top end of scale – see below
			NSSE 4c. <i>Analyzing an idea, experience, or line of reasoning in depth by examining its parts</i> Senior Approaching RIT 3.0, Carnegie Peer 3.1	
			NSSE 4d: <i>Evaluating a point of view, decision, or information source</i> Senior Not Met RIT 2.7, Carnegie Peer 3.0	
			NSSE 4e. <i>Forming a new idea of understanding from various pieces of information</i> Senior Approaching RIT 2.9, Carnegie Peer 3.0	
University Level Benchmark	100% of programs will identify at least one program goal/slo aligned to Critical Thinking	Employers will rate RIT students 4.0 or higher Scale 1(poor) - 5(excellent)	RIT Seniors will report a mean that is higher than or on par with their Carnegie Peers (n= 1500)	Needs to be determined Importance Scale: Not at All to Very Important Effective Scale: Not at all – A Great Deal
Preliminary Action Items	Develop faculty team to determine criteria, core assignment(s) and set benchmark	Review/analysis co-op student evaluation responses to qualitative questions re: CT	Review NSSE 2015 data for trends	Determine benchmark

RIT Student Learning Outcomes Assessment Office 2015



General Education Student Learning Outcomes Assessment Schedule 2016-2022

Framework	General Education Student Learning Outcome	2016.17 Assessment		2017.18 Assessment		2018.19 Assessment		2019.2020 Assessment		2020.21 Assessment		2021.22 Assessment	
		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Communication	Express oneself effectively in common college-level written forms using standard American English						X						X
	Revise and improve written products		X						X				
	Express oneself effectively in presentation, either in spoken standard American English or sign language			X						X			
	Demonstrate comprehension of information and ideas accessed through reading				X						X		
Critical Thinking	Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information				X						X		
	Analyze or construct arguments considering their premises, assumptions, contexts, and conclusions, and anticipating counterarguments	X						X					
	Reach sound conclusions based on logical analysis of evidence					X						X	
	Demonstrate creative or innovative approaches to assignments or projects						X						X
Social	Analyze similarities and differences in human experiences and consequent perspectives					X						X	
Global	Examine connections among the world's populations						X						X
Ethical	Identify contemporary ethical questions and relevant positions	X						X					
Scientific Principles	Demonstrate knowledge of basic principles and concepts of one of the natural sciences		X						X				
Natural Inquiry of Science	Apply methods of scientific inquiry and problem solving to contemporary issues and scientific questions		X						X				
Mathematical	Comprehend and evaluate mathematical or statistical information			X						X			
Mathematical	Perform college-level mathematical operations or apply statistical techniques			X						X			
Artistic	Interpret and evaluate artistic expression considering the cultural context in which it was created	X						X					

Appendix 4 – RIT University News Effort for ACT (M. Morphy)

University News Services has incorporated some bolder moves in regards to news coverage of applied critical thinking at RIT. Although we utilize both [Profnet](#) (which connects journalists to expert sources) and [HARO](#) (Help a reporter out) to connect with major news organizations, we also are working closely with Prof. Eugene Fram. During the past year, he has earmarked specific ACT media coverage in the news and we designed a pitch letter to send as a response that highlights our ACT events, newsletter and experts in the field. In doing so, we have attracted a roster of interested reporters, including Terri Williams of goodcall.com, to consider our ACT university-wide program as a “foundation” for all students to develop skills in reasoned judgement in thought and action. The next step for 2017-2018 would be to target national reporters on how RIT students with critical thinking skills can impress and attract potential employers—and more importantly, how ACT has become a survival skill in the workplace.

Appendix 5 – Fram Award for Excellence in Applied Critical Thinking at Imagine

Since applied critical thinking at RIT is an active process, awards are based upon the applicant's ability in their response to show evidence of the quality of the critical thinking process used to arrive at the final outcome of the exhibit. Responses are evaluated to the degree with which they demonstrate excellence in applied critical thinking. <https://www.rit.edu/academicaffairs/applied-critical-thinking/awards>

2017 Winners

Small Group Award (Exhibit INS-1160): Ambio & Critical Thinking

Team: Julianne Burke, Josh Ladisic, Conner Hasbrouck, Jess Wiltey, Bennoni Thomas, Colton Woytas, Sudarshan Ashok, Vincent Lin

Synopsis: A team of 5 designers and 3 developers on the path to creating a digital platform that breaks distance to help people to reconnect with their separated loved ones in a naturally intimate way, leveraging latest wearable technology. In their research of current technological innovations that would serve our goals, the team discovered a technology that determines a user's mood through biological data such as blood pressure, heart rate, breathing pattern and vocal tone. Brainstorming how this technology could be sculpted into a delightful product experience to solve our problem in mind, we conducted ideation sessions to come up with various concepts through multiple rounds of sketching and iteration. Conducting business research to understand which platforms would solve our user needs the best, we noticed trends that showed smartwatch products such as Apple watch or Android wear with increasingly growing market sizes and technological offerings that make implementation of our solution easy. Leveraging the API(Application Program Interface) created by the development team, we worked towards coming up with various iterations of different use cases thus furnishing a quick prototype through which rounds of feedback and additional rounds of iteration were followed. Through further analysis of the wearables market and mentorship advice from professors and alumni mentors from the Silicon Valley, we understood the unique opportunity space to create our own wearable product that lets users share their mood.

Large Group Award (Exhibit SUS-3260): Using Innovations in Technology to Combat Violence (Simulation & Behavioral Health: Meet Avatars/SimMan)

Team: Meghan Lewis, Alli O'Malley, Nicole Trabold, Cassandra Berbary, Lindsay Chatmon, Brittany St. Jean, Joshua Aldred, Akshay Kumar Arun, Anthony Perez, Karie Carita, Jason Chung, Keli DiRisio

Faculty, Staff & Community Industry Mentors: Dr. Caroline J. Easton (CHST, Professor/Researcher and PI); Dr. Richard L Doolittle (CHST, Professor/Faculty Researcher).

Synopsis: Violence is escalating and continues to contribute to the burden of disease at the worldwide level. The negative consequences are devastating to families and society as a whole. The health consequences are numerous and include trauma, substance misuse, depression, anxiety disorders, medical problems and loss of work. The estimated cost to treat victims of violence and offenders is \$5.8 billion dollars each year. Compounding this problem is the absence of effective treatments for violence, especially among those who offend violence. Clinicians and policy makers look for answers to help intervene to treat the after effects of violence. We believe that advances in science (e.g., targeted and evidenced based behavioral therapy strategies) can be delivered by interactive technological platforms, which can standardize the way behavioral health problems are screened and treated. Violence is contagious and often multi-generational, which, in turn, requires all necessary means to intervene in ways that are easily disseminated allowing access to evidenced based screening and treatment strategies.

Appendix 6 – Fram Faculty Fellow Posting

The Applied Critical Thinking (ACT) Initiative at RIT is led by the Eugene H. Fram chair and aims to increase RIT's capability & reputation in critical thinking. The Eugene H. Fram Chair in Applied Critical Thinking and associated programming were funded in 2011 by an anonymous RIT alumnus who made a generous donation to honor SCOB Professor emeritus Dr. Eugene H. Fram.

There are three outcome pillars of this effort:

- Pedagogy & student success
- Faculty scholarship
- Events, outreach & reputation building

The current Fram chair seeks a faculty partner who will support the growth of critical thinking across RIT, particularly within the degree domains, with the overall aim of increasing student success.

This can be accomplished through working with the Fram chair, existing internal and external Fram Chair advisory boards and other campus partners to:

- Provide leadership in sharing of best critical thinking pedagogical practices.
- Contribute to the development of applied critical thinking assessment tools, processes and data.
- Examine assessment data and information to support scholarly outcomes and create feedback loops to inform instruction and student success.

Those interested should submit a package which includes a letter of acknowledgement and support from the faculty's department chair, a CV and a letter of interest that includes a discussion of how the faculty member envisions contributing to the proposed activities as the Fram faculty fellow. The package should demonstrate an understanding of RIT processes and systems, a collaborative orientation and an ability to work with other RIT initiatives for mutual success. The exact POW will be composed in collaboration with the Fram chair and will reflect the goals of the ACT initiative and the faculty fellow, including measurable outcomes of performance.

The appointment is a one year renewable term, dependent on need and performance. The fellow will be supported through a course release each semester (2 total) and a budget for travel, supplies, etc.

Interested faculty should submit their package **by 12:00 PM on May 12, 2017** to the current Fram chair, Dr. Jennifer Schneider at jlwcem@rit.edu.

Further information on RIT's applied critical thinking initiative can be found at <http://rit.edu/criticalthinking>.

Appendix 7 – Selected CT Courses

Year One: When DisasTer Strikes!

Course Description:

The YearOne class serves as an interdisciplinary catalyst for first-year students to access campus resources, services and opportunities that promote self-knowledge, personal success, social responsibility and academic skills awareness and application. YearOne is also designed to challenge and encourage first-year students to get to know one another to build relationships and to help them become an integral part of the RIT campus community.

Course Learning Outcomes:

1. Students will describe general collegiate academic expectations.
2. Students will identify and utilize resources and skills to assist in academic success.
3. Students will utilize campus resources that aid in personal success and transition to RIT.
4. Students will attend RIT events and reflect on their connection to RIT and engagement with the campus culture at various levels.
5. Students will reflect on their personal goals related to transition to RIT and describe a plan for continued academic and personal success.
6. Students will be able to describe “T-shaped” competencies including how to work in teams, speaking/presentation skills, critical thinking, interpersonal skills and how to describe your experiences in and outside the classroom.

World Making: An Experimental Graduate Salon Spring Semester 2017

Salon Theme: Every academic discipline creates knowledge and engages in “world making”. But in order to address complex problems, we need to explore how these different disciplines and “worlds” talk to each other. Furthermore, we need to engage in acts of “translation” if we are to cross disciplinary boundaries and collaboratively and responsibly connect the different ways disciplines solve problems. This salon will provide a venue for exploring how to do this.

SOIS Course The Meaning of Things – in Three Objects is 9 Credit Hours and a Complete Immersion

The Meaning of Things – in Three Objects (SOIS CMDS 350) is a nine-credit class that fulfills the requirements for an entire immersion called The Meaning of Things. The course is a concentrated, interdisciplinary study of three "things," specifically, the harmonica, the sail, and the game. (The objects will change in future classes.) Students will learn about the three objects including the broader social and historical contexts, their consequences for and impact on human experience, as well as the design problems they pose and solve. The course is team-taught by three faculty from across RIT with contributions from other faculty. The course requires six contact hours per week in class (Tuesday and Thursday, 2-5 pm), with the remaining "class time" delivered in a blended (online) format with regular out-of-class assignments and required participation in several events that occur outside of the scheduled class times, including field trips to the Strong Museum of Play and a blues club, and a sailing experience.

Appendix 8 – Strategic Plan: ACT Linkages in ‘Greatness through Difference’

Applied Critical Thinking Excerpts from ‘Greatness through Difference’, RIT’s strategic plan.

Difference maker I.1: RIT will build upon its strong academic portfolio, extensive experiential learning and co-curricular offerings, and the rich diversity of its people and programs to develop “T-shaped” graduates possessing both disciplinary depth (the vertical axis of the “T”) and breadth across multiple skills and competencies (the horizontal axis, or “transversal” skills).

Objective I.1.1

Introduce a comprehensive co-curricular transcript that will reflect students’ competencies to employers in such necessary skills as *critical thinking*, written and oral communication, leadership, visual interpretation, collaboration, and research.

Objective I.1.2

Develop a national reputation for applied critical thinking and ensure that it is deeply interwoven in every program and in general education.

In addition to those explicit mentions of critical thinking, ACT is also a key skill to success in many other facets of the RIT strategic plan, and our efforts also contribute directly to:

Difference maker I.2: RIT will offer opportunities for study at the intersections of technology and the arts, imagination and application, and rigor and curiosity—all designed to meet the demands of future careers in the complex global economy.

Difference maker I.6: Through a blend of curricular, co-curricular, and experiential offerings, RIT will build a leadership program that will equip (provide the skillset necessary to empower) more graduates to become leaders in their fields.

Difference maker I.8: RIT will be a center of innovation, creativity, and entrepreneurship that serves as an important economic engine for Rochester, the region, and the nation.

Difference maker I.9: RIT will establish a campus wide culture that embraces alumni, contributes to their lifelong learning, and relies upon them for counsel and support.

Building of a national reputation relies upon a university commitment coupled with a notable external contribution to the development of applied critical thinking. Achievement of these objectives will require a complete understanding of how RIT shapes critical thinking capability

in its students, and the resulting evidence of exceptional outcomes. To ensure success, the university is (1) establishing a continuous improvement process grounded in performance measures and student achievement assessment (2) continually seeking best practices and opportunities, (3) integrating high quality ACT across general education and program experiences for students, and (4) demonstrating results and contributing scholarship artifacts that are recognized internally and externally.