USCAnnenberg

**CMGT 515: Innovation and
the Information Economy (4.0 Units)**

Fall 2020 - Mondays– 2:00pm-4:50pm
Section: 21726D
Location: Online and ANN L105A

Instructor: Dr. Morten Bay

Office: Online
Office Hours: Tuesdays Noon-2pm and **by appointment**
(Signing up for office hours is <u>required</u>. Please go to
https://bay-usc.youcanbook.me to sign up.)

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I. Course Description
Though the word "Innovation" can be traced back to the middle ages, it is only in recent centuries that it has truly gained the impactful meaning we now use it with. We think of "innovation" as a descriptor of progress, and of the development of new opportunities and knowledge. Through innovation, life moves forward. Who wouldn't want to be part of that?

But innovation, as it turns out, is not so simple. It is a much more complex phenomenon than the "innovation" mentioned in daily, colloquial conversation. Many people conflate it with invention, but it is not the same. Neither is it just the same as "progress". Innovation can both be a deliberate strategy and a eureka moment. Sometimes it can be conjured up artificially, sometimes innovation must emerge on its own.

This course takes you inside the version of the term "innovation" that we use most often nowadays. That is, *technological* innovation. Since the course bridges the Communication Data Science and Communication Management programs, the course focuses on innovation in recent *communication* technologies, with a few excursions into, e.g., medical and agricultural technologies. Current technological innovation and development is intrinsically tied to the environment in which it exists, i.e., the so-called "Information age", which has also been described as the *Post-industrial Era*, ushering in the *Network Society,* and the *Information Economy*. The latter is also a focus of this class, so that we may examine how innovation actually works in real life and not just on paper.

Therefore, the course is divided up into four separate parts, identifiable by different shades of blue and green in the weekly course overview below:
1. The history of Innovation
2. Theories of innovation
3. The information economy
4. Innovation in practice

We will spend the most time on the last part, Innovation in Practice, so that you can see how everything from parts 1-3 comes together in the real-life explorations in 4.

By the end of the course, you will have not just a theoretical and historical understanding of innovation in the American tradition, you will also have gained substantial insight into how innovation is performed in practice and tried your hand at some of the most important skills needed to do so. You will also have been introduced to the dark side of innovation. You will see why sometimes, innovation not such a good thing, giving you a balanced understanding of innovation in theory and practice to take with you into your professional life.

II. Student Learning Outcomes

Upon completion of this course, it is expected that you will be able to:

Theory
- Explain the meaning of the term "Innovation" in relation to communication technology
- List and briefly describe the central schools of thought within Innovation Studies
- Provide an overview of the history of the U.S. approach of innovation
- Describe the conditions and elements that may impact, foster or hinder innovation
- Describe roles of actors in innovation systems, including the state, organizations and individuals
- Describe the central tenets related to the term "Information Economy"
- Explain how the Information Economy is different than other economies in history

Practice
- Create basic strategies for launching an innovative product, including pitching for funding
- Analyze and describe branding and marketing efforts that center around innovation
- Analyze and begin the implementation or improvement of organizational innovation practices
- Unpack and describe the debate over patents and innovation
- Present an analysis of real-world corporate or state innovation practices and suggest improvements
- Describe, uncover and eliminate unethical issues and unjust inequities in innovation processes.

IV. Class sessions
Due to the conditions forced upon us by the COVID-19 pandemic, the class sessions will look a little different than normal. To accommodate both synchronous and asynchronous participation for students, the regular 170 minutes of class time will be divided into the following session components:

1. **Lecture** on the week's subject (≈ 70 minutes, including question time)
2. A **class activity** to be completed synchronously or asynchronously (≈ 60 minutes)
3. A short **quiz** related to each week's readings, to be completed synchronously or asynchronously (≈ 25 minutes)
4. **Breaks** (≈ 15 minutes)

See the weekly breakdown below for more on the class activities mentioned in 2. The "Watch Party and Discussion" activity is mandatory, but can be completed asynchronously. The discussion part of this activity will happen mostly a written format, and your efforts there will be counted towards your participation points. If you do not participate sufficiently in these discussions, you will not receive points for participation, which can have a serious impact on your overall grade.

V. Description and Assessment of Assignments & Assignment Submission Policy

In addition to participation, there are three activities in this class that will determine your final grade:

1. **Three Case Study Papers**
2. **The Final Paper**
3. **Weekly quizzes**

Please note that the readings for each class are to be viewed as a parallel learning track to the class sessions. While lectures will explain many of the concepts from the readings, not all of them will be covered in class. Yet, you are still expected to be able to understand and employ the insights from the readings in your assignments, even those insights that were not mentioned in the lectures. If you have any questions with regard to understanding the readings, do not hesitate to reach out to your instructor or ask during class session time…after you have made sure your question was not answered during the lecture.

1. **Case Study Papers:**

The three case study papers have a maximum length of five doubled-space pages in the APA format, including references, but not including the front page. Each paper acts as a response paper to the course section(s) we have completed at the time the papers are due. You will be asked to analyze and describe an example (case) of innovative communication technology that relates to:

Case Study Paper 1: The history and theories of innovation (due October 5)
Case Study Paper 2: The Information Economy (due October 26)
Case Study Paper 3: The real-world practice of Innovation (Due November 23)

More detailed assignment prompts for each paper will be made available at least two weeks before their due dates. Case Study papers must be submitted via Blackboard/Turnitin in either DOC(X) or PDF format. No other formats or delivery methods will be accepted. Submissions via e-mail will only be accepted in the case of technical problems or emergencies.

2. **The Final Paper**

For the final paper (due December 9), you will rewrite and expand one of the three Case Study papers you have already handed in. The paper must be at least 15 pages long, but no more than 20 pages. It is permissible to reuse your previous paper in its entirety as a foundation for the final paper, but it must be changed, edited and/or rewritten to reflect the feedback you have received from the instructor when it was graded.

Your final paper should encompass as much as possible from the entire course. In other words, you can approach writing the long paper as taking one of the shorter ones and applying the insights from class that were not used the first time around. Per Communication Management program rules, you must use APA formatting for the paper. A more detailed prompt will be provided several weeks before the paper deadline.

The final papers must also be submitted via Blackboard/Turnitin in either DOC(X) or PDF format. No other formats or delivery methods will be accepted. Submissions via e-mail will only be accepted in the case of technical problems or emergencies.

Weekly Quizzes:
Note that the readings for every week contain more material and insights than we have time to cover in class. For this reason, your comprehension of the reading materials will be tested in weekly quizzes that count towards your final grade. The quizzes can be found on Blackboard in the days leading up to our weekly class meeting but

will disappear 15 minutes before the beginning of class. You will NOT be able to retake the quiz if you respond incorrectly to the question.

If you can demonstrate that you had technical issues with the quiz module, or if you missed any quizzes and have acceptable reasons, you will be allowed to retake any remaining quizzes at the end of the semester.

Participation This course was planned as a hybrid/flex class but will now begin as a fully-online class due to the COVID-19 conditions.
If/when those conditions change and the hybrid/flex plan is re-activated, some class sessions will take place on campus. You are NOT required to attend in-person, even if classes are being conducted in a classroom.

However, part of your grade will be determined by your participation in the sessions, online or offline, synchronous or asynchronous. If you want to get a good participation grade, you should be attentive and engage with the class discussion, whether online or in-person. A lot of class activity will consist of giving feedback on your classmates' projects, both synchronously and asynchronously. Your level of engagement in these activities will weigh heavily when determining your participation grade. While it is not required, it is strongly encouraged that you make use of your device's camera in synchronous online sessions for this reason or compensate for your visual absence in other ways. If this presents a problem for you for personal or technical reasons, please reach out to the instructor to discuss workarounds.

V. Grading
a. Breakdown of Grade

Assignment	Points	% of Grade
Case Study Paper 1 (Due Oct 5)	100	15
Case Study Paper 2 (Due Oct 26)	100	15
Case Study Paper 3 (Due Nov 23)	100	15
Quizzes (Due weekly)	200	15
Final paper (Due Dec 9)	100	25
Participation	100	15
TOTAL		**100%**

b. Grading Scale (TBC)

94 to 100%: A	80% to 83%: B-	67% to 69%: D+
90% to 93%: A-	77% to 79%: C+	64% to 66%: D
87% to 89%: B+	74% to 76%: C	60% to 63%: D-

84% to 86%: B	70% to 73%: C-	0% to 59%: F

c. Grading Standards

Letter Grade	Description
A	Excellent; demonstrates extraordinarily high achievement; comprehensive knowledge and understanding of subject matter; all expectations met and exceeded.
B	Good; moderately broad knowledge and understanding of subject matter; explicitly or implicitly demonstrates good, if not thorough understanding; only minor substantive shortcomings.
C	Satisfactory/Fair; reasonable knowledge and understanding of subject matter; most expectations are met; despite any shortcomings, demonstrates basic level of understanding.
D	Marginal; minimal knowledge and understanding of subject matter; more than one significant shortcoming; deficiencies indicate only the most rudimentary level of understanding.
F	Failing; unacceptably low level of knowledge and understanding of subject matter; deficiencies indicate lack of understanding.

d. Grading Timeline

Grading Timeframe and Missing or Inaccurate Score Inquiries/Disputes
For effective learning, students should receive timely feedback on assignments and exams. Therefore, every attempt will be made to grade assignments/exams and post grades within two weeks. Scores for all assignments and exams are regularly updated on Blackboard. You are responsible for notifying the Instructor **within one (1) week** of a score posting if you think a score is missing or inaccurate. Unless a technical error is suspected, you must provide a convincing argument for why you believe your grade should be different, in an e-mail to the instructor. Do NOT sign up for office hours to discuss your grade before having completed this step. Moreover, you only have this period of time to contest a score on an assignment/exam. If you fail to inquire/notify us of any discrepancy, missing score, or contest a score within one week of the date the score is posted, no further changes will be made.

VI. Course Schedule: A Weekly Breakdown (TBD)

Important note to students: Be advised that this syllabus is subject to change - and probably will change - based on the progress of the class, events, and/or guest speaker availability, where relevant. Students should consult the Registration Calendar for dates regarding add/drop deadlines, fees, grading options, etc.

	Readings	Topics and cases	Class Activities - Deliverables and Due Dates
Week 1 Aug. 24 **Course Introduction**	Gert-Jan Hospers: (2005) "Joseph Schumpeter and his Legacy in Innovation Studies"	**Topics** - What is innovation? - Innovation vs invention - Debunking innovation myths	**Class activity** Introductions

	Knowledge, Technology and Policy Watch: *The Current War* (Link on Blackboard)	- What makes innovation happen? - Technological vs cultural determinism	
Week 2 Aug. 31 **History of technological innovation I**	Christopher McFadden: "[27+ Industrial Revolution Inventions that Changed the World](#)" *Interesting Engineering* Holly Fechner and Matthew Shapanka (2018) "Closing Diversity Gaps in Innovation: Gender, Race, and Income Disparities in Patenting and Commercialization of Inventions" *Technology and Innovation* Watch: *The Industrial Revolution* (Documentary – link on Blackboard) Watch: *The Machine That Made Us* (Documentary about the Gutenberg press – link on Blackboard)	**Topics** -What is technology, really? -From the industrial to the postindustrial era - The lack of diversity in the history of innovation **Cases (among others)** - Gutenberg - The combine harvester/agriculture automation -The automobile Steam engine The train Electricity The telegraph The telephone	**Class activity** **Discussion**: How does the history of technological innovation intersect with discriminations on the basis of race, gender, sexuality, class, etc.?
Week 3 Sep. 7	**NO CLASS**		[**Labor Day:** Monday, September 7]
Week 4 Sep. 14 **History of technological innovation II**	Jon Gertner (2012) "True Innovation" *The New York Times* A. Michael Noll (2015) *Memories: A Personal History of Bell Telephone Laboratories* p. 1-17. Regina Dugan and Kaigham Gabriel (2013): "Special Forces" Innovation: How DARPA attacks	**Topics** - Historical centers of innovation in the U.S. - The 35-year development cycle **Cases (among others)** DARPA / ARPANET Silicon Valley Fairchild/Intel/HP IBM Apple Artificial Intelligence	**Class activity** **Watch party/chat discussion:** *Silicon Valley - American Experience* documentary

	problems" *Harvard Business Review* Jane Macallion: "10 amazing DARPA inventions: how they were made and what happened to them" *IT Pro* Tendayi Viki (2017): "As Xerox PARC Turns 47, The Lesson Learned Is That Business Models Matter" *Forbes* Judy O'Neill (1995): "The Role of ARPA in the development of the ARPANET 1961-1972" *IEEE Annals of the History of Computing*	WiFi SRI/Douglas Engelbart Xerox PARC	
Week 5 Sep. 21 **Disruption and innovation theory I**	James Dearing and Jeffrey Cox (2018) "Diffusion Of Innovations Theory, Principles, And Practice" *Health Affairs* https://www.bbva.com/en/3-6-9-formula-create-amazing-customer-experiences/ Watch: Everett Rogers' Diffusions of Innovations speech (Link on Blackboard) M. Mitchell Waldrop (2018): "The Chips are Down for Moore's Law " *Nature* Martin Steinert and Larry Leifer (2010) : "Scrutinizing Gartners Hype Cycle Approach" *PICMET 2010 Technology Management For Global Economic Growth Conference*	**Topics** - Theories of innovation and development - Everett Rogers' Diffusion of Innovation theory **Cases (among others)** Moore's law The Singularity Gartner Hype Cycle	**Class activity** **Breakout group exercise:** Each group is assigned an innovative technology and tasked with finding evidence of its diffusion which will then be presented to the class. [**Fall Recess:** Thursday, October 15 and Friday, October 16]
Week 6 Sep. 28		**Topics**	

Disruption and innovation theory II	Joseph Bower and Clayton Christensen (1995) Disruptive Technologies: Catching the Wave *Harvard Business Review* Clayton Christensen et al. (2015) "What is Disruptive Innovation" *Harvard Business Review* Harold Kerzner (2019) "Disruptive Innovation" in *Innovation Project Management* p. 315-327 Watch: [Disruptive Innovation Explained]	- Disruption theory **Cases (among others)** - Napster and the music industry - Streaming and Hollywood - Amazon and books - The PC - Smartphones vs cell phones	**Watch party/chat discussion:** *Downloaded – The Story of Napster*
Week 7 Oct. 5 **The information economy I**	Archibugi Daniele and Andrea Filippetti (2015): "Knowledge as a Global Public Good" *Druid15* Crash Course in Economics videos (Links on Blackboard) Jenny Luna (2018): "Why Every Business Will Soon Be a Subscription Business" *Stanford Business Insights*	**Topics** Introduction to the foundations of economics Information and data as commodities Rival vs non-rival Old vs new business models Subscription vs ownership Convenience **Cases (among others)** iTunes v Spotify Netflix v Blockbuster	**Class activity** **Teach the teacher:** In a rapid-fire fashion, all students are randomly assigned a subject that they must give a quick explanation of to the instructor, based on the 'Crash Course in Econ' videos…so take good notes! ## Case Study Paper I due
Week 8 Oct. 12 **The information Economy II**	Trebor Scholz (2016): *Uberworked and Underpaid: How Workers Are Disrupting The Digital Economy* p. 18-57	**Topics** - Digital Labor - Gig economy **Cases** Uber/Lyft Instacart/Doordash AirBnB mTurk	**Class activity** **Watch party/chat discussion:** *The Cleaners*

		Fiverr Taskrabbit Upwork	
Week 9 Oct. 19 **The information Economy III**	Nick Srnicek (2017): "The Challenges of Platform Capitalism" *Juncture* Vol. 23, issue 4 Shoshana Zuboff (2015): "Big Other: Surveillance Capitalism and the prospects of an information civilization" *Journal of Information Technology* Safiya Noble (2018): "Google Has a Striking History of Bias Against Black Girls" *Time*	**Topics** Capital flow in 21st century tech Big data Surveillance/Platform capitalism **Cases (among others)** Amazon Google Microsoft Apple Facebook/Instagram	**Class activity** **Discussion:** Critical debate about the dark side of the information economy
Week 10 Oct. 26 **Innovation in practice I**	Ian Willis (2019) "Chapter 2: The Carbon Microphone" in *Thomas Edison – Success and Innovation through Failure*, p.11-47 Gladwell (2011) "Creation Myth: Xerox PARC, Apple, and the truth about innovation" *The New Yorker*	**Topics** - Entrepreneurship, Innovation leadership and strategy - Debunking startup, influencer and innovator myths - Innovators vs motivators, idea people vs business people **Cases (among others)** Thomas Edison Steve Jobs Mark Zuckerberg Marc Andreesen Elon Musk Mark Cuban Paul Baran Bob Taylor The ARPA directors Bell Labs,	**Watch party/chat discussion:** *Steve Jobs: The Man in the Machine* **<u>Case Study Paper II Due</u>**
Week 11 Nov. 2	Raghu Garud et al. (2015) "Business Innovation Processes" from *Oxford*	**Topics** - Innovation inside the firm	**Watch party/chat discussion:** *American Factory*

Innovation in practice II	*Handbook of Creativity, Innovation and Entrepreneurship*	- Motivating others to innovate - Innovating from your place in the hierarchy - Innovation and knowledge sharing in organizational networks - The cost of innovation - Innovation and risk management - Innovating through acquisition **Cases (among others)** - Apple - Xerox PUP - MySpace vs Facebook - E-mail - MS Office vs Google - Microsoft - Alphabet	Assignment of pitch subject for next week
Week 12 **Nov. 9** **Innovation in practice III**	Benjamin Legum et al (2019) "Funding Methods" in *Engineering Innovation*	**Topics** - Funding (VC, angel, IPOs etc.) - What to think about when pitching - Crowdfunding	**Pitch exercise** Each student makes a very short investor pitch (no slides) of an already-existing company as if it was new, emphasizing its innovations
Week 13 **Nov. 16** **Innovation in practice IV**	David Aaker (2007) "Innovation: Brand it or Lose it" *California Management Review* David Aaker (2018) "When Innovation needs vertical integration" *Medium*	**Topics** - Branding innovation - How to market yourself as innovative - How to market innovation as a determinist entity you are part of **Cases (among others)** - Apple vs PARC - Theranos - Juicero - Oculus/Facebook - Google - Microsoft	**Watch party/chat discussion:** *The Inventor: Out for Blood in Silicon Valley*

Week 14 Nov. 23 **Innovation in practice V**	Aram Sinnreich (2019) "Copyright Piracy" in *The Essential Guide to Intellectual Property, p. 176-197* IRENA (2013) "Intellectual Property Rights: The Role of Patents in Renewable Energy Technology Innovation" Cassandra Sweet and Delibor Eterovic (2019)" Do patent rights matter? 40 years of innovation, complexity and Productivity" *World Development*	**Topics** - Intellectual property and innovation - How patents and copyright both help and hinder innovation **Cases (among others)** - Greentech - Piracy - The Telephone - Patent trolls - Samsung vs Apple vs Qualcomm vs Intel	**Watch party/chat discussion:** *The Patent Scam* **<u>Case Study Paper III due</u>** [**Thanksgiving Recess:** Wednesday, November 25 to Sunday, November 29]
Week 15 Nov. 30	Prepare to discuss your paper	**Final paper workshop and evals**	
STUDY DAYS Dates: 12/5-12/8			
FINAL EXAM PERIOD Dates: 12/9-12/16			**<u>Final paper due 12/9</u>**

VII. Policies and Procedures

Additional Policies

Diversity and inclusion:
This class consists of students from a very diverse range of backgrounds and cultures. Intellectual freedom is a priority in class discussions, but **any form of sexism, racism, xenophobia, homophobia or other forms of discriminatory behavior on the basis of gender, ethnicity, sexuality or class will not be tolerated. Incidents will be reported to the university immediately.**

Should you be offended or hurt by anything said in the classroom or require any form of trigger warnings, **speak up.**

The above naturally also applies to things said by your instructor, who is a human being, always learning, and can make mistakes. Do not be afraid to <u>call out your instructor</u>. If done in a respectful manner, this will <u>not diminish</u> your standing in class, but <u>will improve it.</u>

If you are not comfortable speaking up in class, you can contact the instructor privately to remedy the situation. On Blackboard, you will find a form that can used for this kind of communication, but also for course-related questions you are not comfortable asking in a class session.

Technology policies:
Due to the Hybrid/Flex execution of the course and the pandemic affecting it, the technology policy is more relaxed than usual. However, for in-person meetings, please refrain from using your smartphone for anything but Zoom (if you need audio, for example).

Use of non-relevant electronic technologies such as metal detectors, model trains, vintage transistor radios, curling irons, microscopes, the "Operation" game, thermometers, steam irons, Xboxes, PlayStations, Nintendo consoles, LEGO Technic brick sets, model trains etc. are banned during both in-person and online sessions. Electric guitars are allowed in online sessions as long as your Zoom microphones is muted.

Communication

Your instructor's preferred mode of communication is e-mail, using the address stated above. Please allow 24 hours for responses on weekdays and 48 hours for responses on weekends.

Statement on Academic Conduct and Support Systems
Academic Integrity Policy:
The School of Communication maintains a commitment to the highest standards of ethical conduct and academic excellence. Any student found responsible for plagiarism, fabrication, cheating on examinations, or purchasing papers or other assignments will be reported to the Office of Student Judicial Affairs and Community Standards and may be dismissed from the School of Communication. There are no exceptions to the school's policy.

Academic Conduct:

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

In addition, it is assumed that the work you submit for this course is work you have produced entirely by yourself, and has not been previously produced by you for submission in another course, without approval of the instructor.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the university's site on **Campus Safety and Emergency Preparedness**.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.
Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu
Non-emergency assistance or information.

Annenberg Student Success Fund
https://annenberg.usc.edu/current-students/resources/additional-funding-resources
The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.