



9th Annual
Undergraduate Conference
for Research and Creative Practice

Thursday, April 19th, 2018
8:30 AM to 12:30 PM
Hammond Building



Sponsored by Center for Teaching and Learning, The Student Government Association,
The Office of the President, Academic Affairs, The Alumni Association, and Student Affairs

8:00-8:45 AM, REGISTRATION & WELCOME RECEPTION- Hammond Main Lounge

Fitchburg State University Chamber Choir: Directed by Jonathan Harvey, Student Singers: P.J. Cignarella, Beth Conte, Maya Dunham, Sarah Machado, Curtis Monahan, Dakota Potter, Sarah Stevens

Welcome: Provost and Vice-President for Academic Affairs, Alberto Cardelle and Conference Chair, Erin Rehrig

9:00-10:00 AM, ORAL PRESENTATIONS AND FILMS

Hammond G01A- Summer Research Collaborative Project (9:00 AM -10:15 AM)

Application of Geographic Information Systems in Assessing the

Health of the Nashua River.....Jacob Hogue, Sean Beverly
Water Quality of the Nashua River.....Nicole Skerry, Kyle Hofer
Sediment Analysis of the Nashua River..... Tallie Foster
Biological Assessment of the Nashua River.....Anne Saball, Olivia Piscitelli
Development of a Water Quality Index (WQI) for the Nashua River ProjectCasey Downes

Hammond S08

Analysis of tRNA-Directed Riboswitches in *Bacillus cereus* and *Bacillus anthracis*.....John Sanford
Detection of Bed Bugs using Fluorescence of Coumarins in the Synthesis and
Evaluation of Fluorescent Properties of Coumarin Derivatives.....David Nunes
Campaign for a Smoke Free Campus.....Allison Botko

Ellis White Lecture Hall

The Erasure of the Gay Superhero.....Shannon McInerney
LGBTQ+ Representation in TV and Film.....Mónica Liao Queliz
Character Development in Short Films.....Jay Reiss
Taboo in the Films of Yorgos Lanthimos.....Shane Barlow

University Archives (Hammond S03)

Interning at The Archives: Rediscovering the Great War.....John Pino
The Mystery of Palmer.....Brianna Santos

Hammond G19

Panel Discussion: #MeToo: Controversial Topics in Classroom Settings.....Seferine Baez, Emily Martin,
Kaitlynn Chase, Sean Carney, Stefani Munoz

Hammond 214

A Numerical Taylor Series Method for Initial Value Problems.....Daniel Hanmore
Trisection in Origami Geometry.....Zi Lin
Music of Pythagoras.....Laurin Harvey
Network Penetration Testing: Pre-Connection Attack.....Huy Vo

Hammond 314

Fairness Doctrine Repeal and the Liberal Reaction.....Sarah Gardner
The Roman Mithras..... Dylan Arruda

10:00-11:00 AM, POSTER SESSION- Hammond First Floor, ARTeries GALLERY EXHIBIT- G-Level Lobby

10:00-11:00 AM, CREATIVE WRITING SHOWCASE- Ellis White Lecture Hall

Autumn Battista, *On the Night of My First Deathbed*
Hannah Britten, *An Orbit Chase*
Kaitlynn Chase, *The Four of Us*
Faith Chesbrough, *Criss Cross*
Michael Costanza, *Cliffhanger Hanging in There*

Nicholas De Paula, *I Love This Country*
Ethan Thibault, *Ace of Hearts*
Jake Warnock, *A Millennial to His Phone*
Heather Ferguson, *In Memory of the Summer Guest,*
Oliver, Who Left August 1983, Being 24 Years Old

11:00-11:45 AM, ORAL PRESENTATIONS

Hammond G01A- Summer Research Collaborative Project

Public Health in Fitchburg Using GIS.....	Timothy MacLaughlin, Nicholas DePaula
Fitness Facilities in Fitchburg: A Mixed-Methods Research Study.....	Angelique Chaput, Jaclynn Brown,
Physical Activity Habits and Indicators of Health in a	Allison Botko, Emily Floyd
Low-Socioeconomic Community.....	Caitlyn Wunsch , Anthony Berry, Theresa Rook, Kathleen Gildea

Hammond G01B

The Benefits of Becoming a College Town.....	Hailey O'Brien
Adventure Does the Soul Good; Why Every Person Should Study Abroad.....	Samuel Gallagher
GIS Internship with City of Gardner.....	Jon Barto

Hammond S08

RIP Vine: How Social Media DIES.....	Sean Gibbons
Social Media in Higher Ed: Online Campus Communities.....	Seferine Baez
No Really, We Have to Make a Game: Production Processes for Large Student Teams	Ethan Thibault

Ellis White Lecture Hall

Developing a Feature Length Screenplay	Jill Lehmann
Beyond Constraints: Getting Out of My Own Way	Jessica Coates
The Moment that Changed My Life, A Documentary	Jennifer Jordan

University Archives (Hammond S03)

The Legacy of the Cold War.....	Kelsea Filleul
Fitchburg State Student Protests.....	Merrick Henry

Hammond G19

Safe Spaces in the DIY Music Community.....	Emily Boudreau
The Importance of Musical Hooks.....	Joshua Miller
Protest through Music.....	Hannah Geiger

Hammond 214

Surrealism through Horror.....	Chris Pagnottaro
Turning the Inside Out.....	Madison Sale
Conversation Analysis within Podcasting	John Colaanni

Hammond 314

Brookdale: Songs of Youth and Innocence.....	Daniel Hein
Why Mentoring Matters.....	Kaitlynn Chase
Socialization in Chinese and United States Schools and Future Cult Involvement.....	Samantha Shorrock

11:45 AM -12:30 PM- Lunch Buffet for Conference Participants and Families, Falcon Hub in Hammond Hall

The Fitchburg State University Jazz Band, Jerry Sabatini, Director, Johnny Gifford (alto sax), Jonathan Medlin (trumpet), Robin Morris (clarinet), John Sanford (bass), Joey Canney (drums)

The Fitchburg State University Orchestra Rock Quartet, Hildy Schilling, Sponsor, Joe Canney (drums/piano), Tyler Hamilton (drums), John Hayes (electric bass), Cynthia Schilling (violin/ piano)

12:30 Closing Remarks, *Erin Rehrig*

Hammond Main Lounge Posters

1. The Ethical Use of Restraints, *Jennifer Melanson*
2. Assessing Geographic Differences in Crime Rates, *Kaitlyn Withrow*
3. The Impact of Physical Exercise on Music Appreciation, *Samantha Shorrock*
4. Smoking Cessation, *Jordan Ayotte, Hannah Barbarotta, Kristen Moon, Damiana Toscano, Maura Kohan*
5. Preventing Alcohol-Related Readmissions Using SBIRT, *Alicia Abate, Aleah Daveiga, Rachel Danso, Alanah Pacheco, Sarah Mallahan*
6. She Can Be Saved: Improving Education of Postpartum Depression, *Cassidy Vargas, Jane O'Brien, Nicole Bryne, Sarah Catton*
7. Maternal Screening of Postpartum Depression, *Elizabeth Palmer*
8. Bed Rest Compared to Early Ambulation as Early Intervention for DVT, *Saisha Matias, Lexi Bushnoe, April Scott, Lois Dwira*
9. Accuracy of Pediatric Temperature Gauges, *Emily Comtois, Amelia Tooker, Alexis Menard, Amanda Shackley*
10. African-American Women and Cardiovascular Disease, *Joenessa Pierre*
11. Physiological Characteristics of Youth and Junior Elite Triathletes and Competition Performance, *Matthew Valyo, Susan Sotir*
12. Alternative Treatment for Diabetes, *Clever Chaves*
13. A Literature Review of Axenfeld Rieger Syndrome, *Angela Bhowmik*
14. Influenza and Fatal Secondary Complications, *Danielle Fleckner*
15. Intra- and Inter- Individual Differences in Blacknose Dace Scale Size, *Olivia Piscitelli, Alexandra LaBollita*
16. Synthesis of Dicationic DNA Intercalators, *Georgina Asadu, Islynn Agyepong-Boakye, Meghan Umbrello*
17. Computational Approaches to Discovering Driving Somatic Cancer Mutations, *David Nunes*
18. Review: Analysis of Ochratoxin A in Wines Using High Performance Liquid Chromatography (HPLC), *Meghan Umbrello*
19. Pharmacological Focus of Natural and Synthetic Cannabinoids and Their Receptors: A Review, *Casey Downes*
20. The Effect of Silver Nanoparticles on Plant Physiology and Seed Germination, *Gregory Gundberg*
21. Effects of Ligands on Silver Nanoparticles in Nitrile Hydration Reactions, *Quinn Wold*
22. Selectivity of Gold Catalysts: A Review, *Quinn Wold*
23. Synthesis of Fluorine-Containing Compounds, *Lixandra Numbem*
24. Synthesis and Electrochemistry of Heme-Quinoline Compounds, *Enrique Coello*
25. An Optimization Problem to Determine the Flattest 5k at Fitchburg State University, *Casey Taylor, Shawna Ryan*
26. Sabermetrics and Markov Chains: Using Data to Build and Simulate the Optimal Baseball Lineup, *Taylor Lynde, Andrew Mooney*
27. Budget Minimization: The Application of the Simplex Method to Student Life, *Alexander Cochran, Kristen Windoloski*

Hammond Tower Lobby Posters

28. Herstory: Women's Experiences in China, *Jacob Elie, Emily Floy, Lia Jackson*
29. Herstory: Women's Experiences in Germany, *Sam Pappas, Sean Larkin*
30. Herstory: Women's Experiences in Nepal, *Aicha Kone, Justin Hall, Jaquelyn Manyak*
31. International Women's Day Fair Promotional Poster Design, *Moesha Orelus*
32. Analog Resilience, *Matthew Parece*
33. A Reader Will Never Cross the Same River Twice, *Jennifer Desilvestre*
34. The Role of Art in Anatomical Advances of the Italian Renaissance, *Nicole Walker*
35. The Significance of General Education: Communicating the Value of the LA&S, *Melissa Rheaume, Autumn Battista*
36. Research Study on Globalism, *Emma E. Hagar, Tehreem Chaudhary, Mory B. Keita, Angelique Chaput*

Gallucci-Cirio Library Lobby Posters

37. Sustainable Net-Zero Housing, *James Baczewski, Tim Maye, Derek Sloan, Cory Lo, Max Schryver, Alex Pyankov, Brandon Gualin*
38. Advantages and Disadvantages Regarding the Many Types of Energy Used in Society Today, *James Baczewski*
39. Virtual Reality: Emerging Applications in Construction, *Rene Larson, Alexandra Eastman, Brianna Santos, Jessica Itzkowitz*
40. Woman in the Construction Industry: Challenges and Opportunities, *Brianna Santos*
41. 3D Laser Scanning Technology in the Construction Industry, *Nicholas Masley, John Murin, Thierry Cheron*
42. Engineering Technology for International Development: Water and Sanitation Case Study from India, *Gaurav Patel*
43. Architecture Building by Frank Lloyd Wright: Jacobs First House, *Gaurav Patel*
44. Residential Lighting, *Gaurav Patel*
45. Smart/Solar Panel Roads, *Connor Puchol, Christian Vogel, Shane Fallon, Bryan Caban*
46. Net-Zero Construction, *Stephen Ellis*
47. The Status and Potential Future of Fuel Supply from the United States - Early 2018, *Mike Fossa*
48. "HuntFell", *Stopped Clock Studios, Game Design Capstone Spring 2018*

Thank you to the sponsors: Dennis Awasabisah, Laura Baker, Mary Baker, Deborah Benes, Soumitra Basu, Robert Carr, D. Keith Chenot, Katharine Covino-Poutasse, Rala Diakite, Emma Downs, Liz Gordon, David Heikinen, Michael Hove, Jane Huang, Asher Jackson, Katherine Jewell, Sanjay Kaul, Mathangi Krishnamurthy, Sara Levine, Benjamin Levy, Viera Lorencova, Monica Maldari, Tara Mariolis, Kevin McCarthy, Philip D. McCormack, Kyle Moody, Nirajan Mani, Abdel Gabar Mustafa, Nadimpalli Mahadev, James T. Noonan, Aisling O'Connor, Benjamin Railton, Erin Rehrig, Sean Rollins, Kori Ryan, Daniel Sarefield, Renee Scappiarone, Hildy Schilling, Peter Staab, Don Tarallo, Teresa Thomas, Kisha Tracy, Jeff Warmouth, Amy Wehe, Daniel Welsh, Danielle Wigmore. **Cover artwork by Amber Haney.**