Program

Friday, May 4  12:00 p.m. – 6:30 p.m.
Saturday, May 5  9:00 a.m. – 3:00 p.m.

HUSH by Yirui Jia ’19
A Welcome from the Provost

I want to welcome you to our annual colloquium on undergraduate research, creative activity and community engagement, Celebration '18.

This event, which is celebrating its 10th anniversary, features our students presenting the results of the great work they’ve been engaged in during the past year. Students from across the academic disciplines are demonstrating over the next two days what’s best about the Gettysburg College experience—intentional collaborations between students and their mentors such that students acquire both knowledge and skills that can be applied to many facets of their future personal and professional lives.

As we in the Gettysburg College community reach this milestone anniversary of Celebration, may we use the opportunity to reflect upon all that we have learned from one another over the past decade and give thought to how we may improve these opportunities for our students over the next ten years.

I hope you enjoy these two days as you choose among the many posters, research papers, films, and performances presented by our students. The excitement and energy generated is made possible in no small measure due to those of you who will be attending the sessions.

As always, the students and I are grateful for your support of this event!

Sincerely,

Christopher J. Zappe, Ph.D.
Provost
Table of Contents

A Welcome from the Provost ................................................. 1
Student Index ........................................................................ 4
Department Index .................................................................. 8
Poster Session Map ................................................................ 9
Poster Session Map Index ..................................................... 10

**Friday, May 4**

Theatrical Performance .......................................................... 12
Panels ..................................................................................... 13
Posters ................................................................................... 15

**Saturday, May 5**

Film Presentations ................................................................... 62
Theatrical Performance .......................................................... 63
Panels ..................................................................................... 64
Portfolios ................................................................................ 75
Kolbe Summer 2017 Research Fellows Panels ......................... 78
Multidisciplinary Panel .......................................................... 81
Acknowledgements ................................................................ 83
<table>
<thead>
<tr>
<th>Name</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aguilera-Gonzalez, Annette</td>
<td>64</td>
</tr>
<tr>
<td>Arnold, Alexa</td>
<td>49</td>
</tr>
<tr>
<td>Arps, James</td>
<td>34</td>
</tr>
<tr>
<td>Ashton, Bridget</td>
<td>67</td>
</tr>
<tr>
<td>Aughinbaugh, Kevin</td>
<td>38</td>
</tr>
<tr>
<td>Bajracharya, Gyasu</td>
<td>26</td>
</tr>
<tr>
<td>Barnes, Haley</td>
<td>27</td>
</tr>
<tr>
<td>Bawa, Baki</td>
<td>14</td>
</tr>
<tr>
<td>Beck, Alec</td>
<td>27</td>
</tr>
<tr>
<td>Benson, Olivia</td>
<td>69</td>
</tr>
<tr>
<td>Beyer, Alyssa</td>
<td>56</td>
</tr>
<tr>
<td>Bhangdia, Nicole</td>
<td>13</td>
</tr>
<tr>
<td>Bielicki, Mary</td>
<td>49</td>
</tr>
<tr>
<td>Blair, Stephanie</td>
<td>60</td>
</tr>
<tr>
<td>Bokma, Evan</td>
<td>17</td>
</tr>
<tr>
<td>Bondi, Brittany</td>
<td>40</td>
</tr>
<tr>
<td>Bonsall, Kirstynn</td>
<td>12</td>
</tr>
<tr>
<td>Bosman, Aimee</td>
<td>65</td>
</tr>
<tr>
<td>Boyland, Danielle</td>
<td>53</td>
</tr>
<tr>
<td>Boyle, Kenneth</td>
<td>17, 38</td>
</tr>
<tr>
<td>Bradford, Lauren</td>
<td>65</td>
</tr>
<tr>
<td>Bradley, Sarah</td>
<td>12</td>
</tr>
<tr>
<td>Brown, Emily</td>
<td>60</td>
</tr>
<tr>
<td>Brusco, Nicolette</td>
<td>12</td>
</tr>
<tr>
<td>Bubenheim, Miranda</td>
<td>76</td>
</tr>
<tr>
<td>Buckley, Mary</td>
<td>58</td>
</tr>
<tr>
<td>Buscher, Elizabeth</td>
<td>69</td>
</tr>
<tr>
<td>Caldwell, Madison</td>
<td>15, 41</td>
</tr>
<tr>
<td>Campbell, Celeste</td>
<td>55, 60</td>
</tr>
<tr>
<td>Canonizanado, Matthew</td>
<td>26</td>
</tr>
<tr>
<td>Carach, Nicole</td>
<td>24</td>
</tr>
<tr>
<td>Cassini, Alyssa</td>
<td>24</td>
</tr>
<tr>
<td>Chen, Siyan</td>
<td>29</td>
</tr>
<tr>
<td>Chou, May</td>
<td>70, 82</td>
</tr>
<tr>
<td>Clark-Cuadrado, Michael</td>
<td>33</td>
</tr>
<tr>
<td>Clevinger, Julia</td>
<td>25</td>
</tr>
<tr>
<td>Cochran, Kelsey</td>
<td>14</td>
</tr>
<tr>
<td>Coe, Matthew</td>
<td>28</td>
</tr>
<tr>
<td>Cooney, Sara</td>
<td>52</td>
</tr>
<tr>
<td>Corcoran, Kimberly</td>
<td>39</td>
</tr>
<tr>
<td>Corradetti, David</td>
<td>65</td>
</tr>
<tr>
<td>Courtney, Maureen</td>
<td>12</td>
</tr>
<tr>
<td>Cox, Elizabeth</td>
<td>52</td>
</tr>
<tr>
<td>Craig, Delia</td>
<td>35</td>
</tr>
<tr>
<td>Cramer, Madison</td>
<td>65, 78</td>
</tr>
<tr>
<td>Cranna, Julia</td>
<td>52</td>
</tr>
<tr>
<td>Crooks, Ailema</td>
<td>49</td>
</tr>
<tr>
<td>Dannenbaum, Audrey</td>
<td>56</td>
</tr>
<tr>
<td>Davis, Kylee</td>
<td>68, 81</td>
</tr>
<tr>
<td>Deatherage, Lani</td>
<td>45</td>
</tr>
<tr>
<td>Deaven, Abigail</td>
<td>25</td>
</tr>
<tr>
<td>DeCristofaro, Joseph</td>
<td>49</td>
</tr>
<tr>
<td>Delianites, Elizabeth</td>
<td>58</td>
</tr>
<tr>
<td>Densmoor, Nicole</td>
<td>69, 79</td>
</tr>
<tr>
<td>DeWitt, Caroline</td>
<td>55, 57</td>
</tr>
<tr>
<td>Dietz, Megan</td>
<td>41</td>
</tr>
<tr>
<td>DiMaria, Alyssa</td>
<td>12</td>
</tr>
<tr>
<td>Ding, Haoyang</td>
<td>13</td>
</tr>
<tr>
<td>Dizney Swanson, Marley</td>
<td>48</td>
</tr>
<tr>
<td>Doak, Alexandra</td>
<td>22</td>
</tr>
<tr>
<td>Downie, Laurel</td>
<td>71</td>
</tr>
<tr>
<td>Dudley, Stefan</td>
<td>55</td>
</tr>
<tr>
<td>Eagen, Brianna</td>
<td>44</td>
</tr>
<tr>
<td>Eady, Jasmin</td>
<td>69</td>
</tr>
<tr>
<td>Ehly, Skyley</td>
<td>34</td>
</tr>
<tr>
<td>Ellis, Daphne</td>
<td>12, 63</td>
</tr>
</tbody>
</table>
Enos, Jenny, 70, 71, 82
Estell, Katherine, 25
Falk, Leah, 13
Fay, Patrick, 33, 34
Ferraro, Chelsea, 76
Filgueira, Cynthia, 51, 52, 60
Finley, Sarah, 39
Fireman, Hannah, 12
Fitzpatrick, Jane, 63
Flores, Gisselle, 64
Fragetta, Shelby, 12
Freed, Sara, 32
Fu, Ruiwen, 32
Gaffney, Shannon, 52
Garrett, John, 61
Gawel, Richard, 30
Gentes, John, 42, 53
Gessler, Laura, 31, 33
Giannini, Julia, 47
Gilbert, Katherine, 50
Gillespie, Lawson, 14
Glazer, Jillian, 55, 56
Glennon, Caroline, 61
Gorab, Alison, 52
Goss, Elizabeth, 50
Granzow, Marni, 59
Groce, Caroline, 52
Groner, Elinor, 46
Gulyas, Leah, 20
Gustafson, Carly, 53
Gustafson, Laura, 58
Hallos, Hannah, 35
Hand, Lauren, 12
Harrison, Emily, 30
Hatzinger, Cara, 27
Hawkins, Isaac, 76
Heath, Jason, 55, 57
Helmstetter, Kaitlyn, 49, 50
Helwig, Dean, 34
Heydenburg, Abigail, 66
Hilfrank, Elizabeth, 62
Hoehn, Kirsten, 12
Holland, Rachel, 13
Holmes, Edward, 75
Hott, Colton, 50
Hou, Xintong, 29
Hubbard, Morgan, 64
Igram, Quinn, 61
James, Ian, 12
Jaramillo, Sydney, 27
Jensen, Anika, 12, 68
Johnson, Kaleigh, 54, 58
Jones, Danielle, 68
Kaminsky, Emily, 14, 73, 74
Kane, Brittni, 43, 51
Kedarnath, Khemilla, 42
Kelly, Janeris, 72
Kirkpatrick, Sarah, 59
Kirsch, Carolyn, 12
Klustner, Bradley, 68
Korowotny, Emma, 73, 74
Kostecky, Caroline, 60
Kowalewski, Douglas, 54
Krain, Alexandra, 53
Kraus, Lindsay, 28
Kress, Mairead, 63
Kurtz, Emily, 19
Lam, Tiffany, 21
Lambert, Olivia, 19
Lanza, Erin, 61
Larson-Pollock, River, 21
Lauck, Jeffrey, 67
Lauro, Alison, 15, 73
Lauro, Melissa, 14, 73
Lebler, Renn, 66
Lessel, Justin, 37
Lewin, Kaitlin, 49
Lewis, Caroline, 73
Liu, Jingyi, 33, 35
Lonergan, May, 37
Lowy, Meredith, 51
Luc, San, 22, 23
Lund, Hayley, 12
Luo, Ziqian, 32, 34
Lyon, Ellery, 39
Ma, Amy, 13
Madison, Cory, 58, 69, 78
Madore, Katie, 63
Malafronte, Anna, 62
Mancino, Michael, 12
Mangala, Gauri, 63
Maronna, Brittany, 56, 57
Marra, Angelica, 37
Martinez, Jessica, 72
Massos, Christopher, 55
McFeaters, Fontaine, 30
McKenna, Patrick, 70, 79
McKenzie, Marion, 40
McPeek, Devin, 23
Medina, David, 26
Mei, Qiqi, 56
Menicali, Luca, 65, 79
Miller, Zachary, 33
Mills, Susanna, 14
Miranto, Julie, 12
Morfill, Katherine, 39
Mountanos, Nikoleta, 63
Mugford, Emma, 52, 59
Mumford, Jackson, 12
Murray, Aphra, 31
Napoli, Robert, 69
Near, Andrea, 43
Nguyen, Ha, 36
O'Donnell, Meghan, 67
Ogozalek, Leonard, 64, 81
O'Malley, Holly, 64
Padrick, Emma, 47
Palmucci, Julia, 15
Paredes, Alexander, 28
Paul, Kathleen, 17, 18
Peduzzi, Olivia, 28
Pokhrel, Aawaz, 47
Pope, Abigail, 63
Puca, Anthony, 61
Purinton, Natalie, 51
Rauch, Hallie, 24
Redmond, Emily, 57
Relin, Jamie, 54
Reymann, Kelly, 77
Richardson, Jared, 63, 65
Richman, Amanda, 66, 80
Richwine, Lindsay, 46
Rocha, Diego, 45
Rodriguez, Elliot, 16
Roessler, Donald, 49
Rogers, Shamee, 12
Romano, Allison, 57
Royere, Hailey, 14
Rubin, Kelli, 60
Russo, Jessica, 57
Salmonsen, Anna, 42
Santiago, Logan, 69
Schanche, Aoife, 41
Schroeder, Erin, 23, 64  Thieringer, Raechyl, 51  Wagner, Joshua, 44
Scolpino, Gabriella, 25  Thompson, Cameron, 20  Wang, Lingji, 34
Segletes, Karl, 75  Toocheck, Thea, 63  Ward, Taylor, 51
Seluja, Camila, 63  Torres, Amanda, 13  Welch, Elisabeth, 63
Shaughnessy, Emma, 49  Torres, Ivy Helena, 14  Welch, James, 32
Shope, Abagale, 34  Trattner, Casey, 56  Whalley, Morven, 50
Shrestha, Karan, 13  Trinh, Thuc Anh, 36  Whitsel, Amy, 50
Silverstein, Ethan, 12  Truong, Dung, 33  Willis, Katherine, 60
Simmet, Olivia, 65  Tyeryar, Clay, 61  Woodley, Kyle, 18, 19
Smith, Garrison, 28  Umholtz, August, 33  Xu, Huilin, 58
Smith, Sarah, 42  Valent, Caroline, 36  Yeoh, Zoe, 16
Sowell, Travis, 12  Valete, Daniel, 48  Yiambilis, Alexandra, 27
Suter, Gretchen, 16  Van Hoof, Ashley, 57  Yu, Xiunan, 33
Swai, Finya, 12  Vickers, Elliana, 21  Zhang, Heyang, 26
Sweeney, Erin, 52  Vorhaus, Molly, 12  Zhang, Yifei, 13
Tang, Shaohua, 32  Wagner, Elisabeth, 53
# Department Index

<table>
<thead>
<tr>
<th>Department</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>15</td>
</tr>
<tr>
<td>Center for Public Service</td>
<td>64</td>
</tr>
<tr>
<td>Chemistry</td>
<td>28</td>
</tr>
<tr>
<td>Cinema and Media Studies</td>
<td>62</td>
</tr>
<tr>
<td>Computer Science</td>
<td>32</td>
</tr>
<tr>
<td>Economics</td>
<td>35, 64, 81</td>
</tr>
<tr>
<td>English</td>
<td>12, 37, 65</td>
</tr>
<tr>
<td>Environmental Studies</td>
<td>38</td>
</tr>
<tr>
<td>German Studies</td>
<td>65</td>
</tr>
<tr>
<td>Globalization Studies</td>
<td>13</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>41, 66</td>
</tr>
<tr>
<td>History</td>
<td>66</td>
</tr>
<tr>
<td>Interdisciplinary Studies</td>
<td>42, 68, 81</td>
</tr>
<tr>
<td>Mathematics</td>
<td>44</td>
</tr>
<tr>
<td>Music</td>
<td>45, 69, 75</td>
</tr>
<tr>
<td>Organization and Management Studies</td>
<td>46</td>
</tr>
<tr>
<td>Philosophy</td>
<td>46</td>
</tr>
<tr>
<td>Physics</td>
<td>47</td>
</tr>
<tr>
<td>Political Science</td>
<td>48, 69</td>
</tr>
<tr>
<td>Psychology</td>
<td>49</td>
</tr>
<tr>
<td>Religious Studies</td>
<td>59, 70, 82</td>
</tr>
<tr>
<td>Sociology</td>
<td>60, 70, 82</td>
</tr>
<tr>
<td>Spanish</td>
<td>60</td>
</tr>
<tr>
<td>Theatre Arts</td>
<td>63</td>
</tr>
<tr>
<td>Women, Gender, &amp; Sexuality Studies</td>
<td>71</td>
</tr>
</tbody>
</table>
Map Index

D1  Arnold, Alexa        Psychology
E5  Arps, James         Computer Science
A16 Aughinbaugh, Kevin  Environmental Studies
C15 Bajracharya, Gyasu  Biology
C20 Barnes, Haley       Biology
E19 Beck, Alec          Biology
C10 Beyer, Alyssa       Psychology
C9  Bielicki, Mary      Psychology
A6  Blair, Stephanie    Spanish
D18 Bokma, Evan         Biology
A7  Bondi, Brittany     Environmental Studies
D8  Boyland, Danielle   Psychology
B14 Boyle, Kenneth      Biology
B13 Boyle, Kenneth      Environmental Studies
B6  Brown, Emily        Spanish
D3  Buckley, Mary       Psychology
E14 Caldwell, Madison   Biology
E15 Caldwell, Madison   Health Sciences
C6  Campbell, Celeste   Psychology
B1  Campbell, Celeste   Spanish
C15 Canonizado, Matthew Biology
E16 Carach, Nicole      Biology
E16 Cassini, Alyssa     Biology
F17 Chen, Siyan         Chemistry
D5  Clark-Cuadrado, Michael Computer Science
D20 Clevinger, Julia    Biology
F7  Coe, Matthew        Chemistry
C8  Cooney, Sara        Psychology
A13 Corcoran, Kimberly  Environmental Studies
C8  Cox, Elizabeth      Psychology
A2  Craig, Delia        Economics
B2  Cranna, Julia       Psychology
C9  Crooks, Alema       Psychology
D9  Dannenbaum, Audrey  Psychology
A27 Deatherage, Lani    Music
E17 Deaven, Abigail     Biology
D1  DeCristofaro, Joseph Psychology
D3  Delianites, Elizabeth Psychology
C6  DeWitt, Caroline    Psychology
C7  DeWitt, Caroline    Psychology
E13 Dietz, Megan        Health Sciences
A10 Dizney Swanson, Marley Political Science
C13 Doak, Alexandra     Biology
C5  Dudley, Stefan      Psychology
A15 Eagen, Brianna      Interdisciplinary Studies
E3  Ehly, Skyler        Computer Science
E17 Estell, Katherine   Biology
E9  Fay, Patrick        Computer Science
E10 Fay, Patrick        Computer Science
E6  Filgueira, Cynthia  Spanish
B7  Filgueira, Cynthia  Psychology
B8  Filgueira, Cynthia  Psychology
B15 Finley, Sarah       Environmental Studies
E6  Freed, Sara         Computer Science
E6  Fu, Ruiwen          Computer Science
E7  Fu, Ruiwen          Computer Science
B2  Gaffney, Shannon    Psychology
B5  Garrett, John       Spanish
F16 Gawel, Richard      Chemistry
E11 Gentes, John        Health Sciences
E12 Gentes, John        Psychology
E8  Gessler, Laura      Computer Science
E10 Gessler, Laura      Computer Science
A23 Giannini, Julia     Physics
C4  Gilbert, Katherine  Psychology
C1  Glazer, Jillian     Psychology
C2  Glazer, Jillian     Psychology
A5  Glennon, Caroline   Spanish
B16 Gorab, Alison       Psychology
A16 Goss, Elizabeth     Psychology
B26 Granzow, Marni      Religious Studies
B16 Groce, Caroline     Psychology
A22 Groner, Elinor      Organization & Management Studies
D12 Gulyas, Leah        Biology
D8  Gustafson, Carly    Psychology
D2  Gustafson, Laura    Psychology
A12 Hallos, Hannah      Economics
F9  Harrison, Emily     Chemistry
E19 Hatzinger, Cara     Biology
C6  Heath, Jason        Psychology
C7  Heath, Jason        Psychology
B19 Helmstetter, Kaitlyn Psychology
B20 Helmstetter, Kaitlyn Psychology
E5  Helwig, Dean        Computer Science
D10 Hott, Colton        Psychology
F18 Hou, Xintong        Chemistry
A5  Igram, Quinn        Spanish
C20 Jaramillo, Sydney   Biology
B3  Johnson, Kaleigh    Psychology
B4  Johnson, Kaleigh    Psychology
A14 Kane, Brittni       Interdisciplinary Studies
B10 Kane, Brittni       Psychology
A25 Kedarnath, Khemilla Interdisciplinary Studies
B17 Kirkpatrick, Sarah  Psychology
B1  Kostecky, Caroline  Spanish
<table>
<thead>
<tr>
<th>Student ID</th>
<th>Last Name, First Name</th>
<th>Major</th>
<th>Student ID</th>
<th>Last Name, First Name</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>B9</td>
<td>Kowalewski, Douglas</td>
<td>Psychology</td>
<td>D7</td>
<td>Redmond, Emily</td>
<td>Psychology</td>
</tr>
<tr>
<td>B9</td>
<td>Krain, Alexandra</td>
<td>Psychology</td>
<td>B3</td>
<td>Relin, Jamie</td>
<td>Psychology</td>
</tr>
<tr>
<td>C17</td>
<td>Kraus, Lindsay</td>
<td>Biology</td>
<td>A20</td>
<td>Richwine, Lindsay</td>
<td>Philosophy</td>
</tr>
<tr>
<td>D17</td>
<td>Kurtz, Emily</td>
<td>Biology</td>
<td>A28</td>
<td>Rocha, Diego</td>
<td>Music</td>
</tr>
<tr>
<td>C16</td>
<td>Lam, Tiffany</td>
<td>Biology</td>
<td>C17</td>
<td>Rodriguez, Elliot</td>
<td>Biology</td>
</tr>
<tr>
<td>D17</td>
<td>Lambert, Olivia</td>
<td>Biology</td>
<td>B19</td>
<td>Roessler, Donald</td>
<td>Psychology</td>
</tr>
<tr>
<td>A8</td>
<td>Lanza, Erin</td>
<td>Spanish</td>
<td>C3</td>
<td>Romano, Allison</td>
<td>Psychology</td>
</tr>
<tr>
<td>D15</td>
<td>Larson-Pollock, River</td>
<td>Biology</td>
<td>B6</td>
<td>Rubin, Kelli</td>
<td>Spanish</td>
</tr>
<tr>
<td>A19</td>
<td>Lessel, Justin</td>
<td>English</td>
<td>C3</td>
<td>Russo, Jessica</td>
<td>Psychology</td>
</tr>
<tr>
<td>D1</td>
<td>Lewin, Kaitlin</td>
<td>Psychology</td>
<td>E11</td>
<td>Salmons, Anna</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>D4</td>
<td>Liu, Jingyi</td>
<td>Computer Science</td>
<td>E15</td>
<td>Schanche, Aoife</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>D5</td>
<td>Liu, Jingyi</td>
<td>Computer Science</td>
<td>D11</td>
<td>Schroeder, Erin</td>
<td>Biology</td>
</tr>
<tr>
<td>A17</td>
<td>Lonergan, May</td>
<td>English</td>
<td>D20</td>
<td>Scopino, Gabriella</td>
<td>Biology</td>
</tr>
<tr>
<td>D6</td>
<td>Lowy, Meredith</td>
<td>Psychology</td>
<td>B19</td>
<td>Shaughnessy, Emma</td>
<td>Psychology</td>
</tr>
<tr>
<td>C18</td>
<td>Luc, San</td>
<td>Biology</td>
<td>E3</td>
<td>Shoep, Abagale</td>
<td>Computer Science</td>
</tr>
<tr>
<td>C19</td>
<td>Luc, San</td>
<td>Biology</td>
<td>F7</td>
<td>Smith, Garrison</td>
<td>Chemistry</td>
</tr>
<tr>
<td>E4</td>
<td>Luo, Ziqian</td>
<td>Computer Science</td>
<td>E11</td>
<td>Smith, Sarah</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>E5</td>
<td>Luo, Ziqian</td>
<td>Computer Science</td>
<td>D19</td>
<td>Suter, Gretchen</td>
<td>Biology</td>
</tr>
<tr>
<td>B15</td>
<td>Lyon, Ellery</td>
<td>Environmental Studies</td>
<td>B8</td>
<td>Sweeney, Erin</td>
<td>Psychology</td>
</tr>
<tr>
<td>B4</td>
<td>Madison, Cory</td>
<td>Psychology</td>
<td>E6</td>
<td>Tang, Shoaehua</td>
<td>Computer Science</td>
</tr>
<tr>
<td>C2</td>
<td>Maronna, Brittany</td>
<td>Psychology</td>
<td>B10</td>
<td>Thieringer, Raechyl</td>
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Front Cover
Yirui Jia‘19
Title – Hush
Medium – oil on canvas

Daniella Snyder ‘18
Title – Piazza della Murate
Medium – digital photograph

Lily Martin ‘18
Title – Corn Maze
Medium - traditional photograph
Ian Schrock ‘18
Title – *Telecom I*
Medium – stoneware (above)

Emma Mugford ‘19
Title – *Instagram Breakfast*
Medium – oil on wood (below)
THEATRICAL PERFORMANCE  Friday, May 4

English

Medieval Drama Presents: May the Farce Be with You!

Student(s): Anika Jensen, Kirstynn Bonsall, Maureen Courtney, Sarah Bradley, Nicolette Brusco, Alyssa DiMaria, Daphne Ellis, Hannah Fireman, Shelby Fragetta, Lauren Hand, Kirsten Hoehn, Ian James, Carolyn Kirsch, Hayley Lund, Michael Mancino, Julie Miranto, Jackson Mumford, Shamee Rogers, Ethan Silverstein, Travis Sowell, Finya Swai, Molly Vorhaus

Mentor(s): Christopher Fee

Description: For Celebration '18, we will stage our own versions of some popular farces. We will provide traditional interludes between farces by employing popular Medieval entertainments including mumming, music, dance, games, and action-packed improvisational theatrics! May the Farce Be with You!!

Time/Location: 4:00 PM-4:30 PM, Breidenbaugh outside
PANELS  Friday, May 4

Globalization Studies

Globalization Studies Capstones

Student(s): Leah Falk, Nicole Bhangdia, Haoyang Ding, Amy Ma  
Mentor(s): Megan Adamson Sijapati  
Time/Location: 12:00 PM-4:50 PM, Science Center 300

Globalization Studies Capstones

Student(s): Yifei Zhang, Rachel Holland, Karan Shrestha, Amanda Torres  
Mentor(s): Megan Adamson Sijapati  
Description: Yifei Zhang, "Global Feminist Standards and Agendas: Implementation by Intergovernmental Agencies and Civil Society Organizations in India"; Amanda Torres, "Hurricane Maria and Globalization: An Analysis of Puerto Rico’s Current Crisis"; Karan Shrestha, "Divorce Between the EU and the UK: The Economic Implications of Brexit"; Rachel Holland, "Globalization, Healthcare and Sexual Violence in Colombia and Peru"  
Time/Location: 12:00 PM-4:50 PM, Science Center 300
Globalization Studies Capstones

**Student(s):** Susanna Mills, Lawson Gillespie, Emily Kaminsky, Melissa Lauro  
**Mentor(s):** Megan Adamson Sijapati  
**Description:** Susanna Mills, "Helen Oyeyemi and Border Identities: Contesting Western Representations of Immigrants through Transnational Literature"; Melissa Lauro, "Is Citizenship Still Relevant?: State Sovereignty, Migration, and Sanctuary Cities in a Globalizing World"; Emily Kaminsky, "Distance Education: Methods of Education for Students in Remote Areas of China"; Lawson Gillespie, "Coastal Tourism in the Americas: Communities in Transition"  
**Time/Location:** 12:00 PM-4:50 PM, Science Center 300

Globalization Studies Capstones

**Student(s):** Ivy Helena Torres, Baki Bawa, Kelsey Cochran, Hailey Royere  
**Mentor(s):** Megan Adamson Sijapati  
**Time/Location:** 12:00 PM-4:50 PM, Science Center 300
Biology

Mitotic catastrophe conferred by defects in a novel $\beta$-propeller protein in Aspergillus nidulans

**Student(s):** Julia Palmucci  
**Mentor(s):** Steven James  
**Description:** We recently identified a novel $\beta$-propeller protein in Aspergillus nidulans containing seven putative WD40 domains. Strains carrying deletions of this gene exhibit a cold-sensitive lethal null phenotype that leads to mitotic catastrophe at the restrictive temperature of 20ºC characterized by fragmented chromatin and absence of a spindle apparatus.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Isolation, Characterization, and Identification of Novel Microflora from the Human Nail, Earlobe, and Axilla

**Student(s):** Madison Caldwell  
**Mentor(s):** Jennifer Powell  
**Description:** The human microflora is a field of intense research for its implications in health and disease. In contribution to this field, three novel strains of bacteria were isolated from distinct human microbiomes and characterized based on their metabolic, antibiotic, and growth profiles in this study. Additionally, genetic sequencing was performed to highlight the most closely related bacterial species and provide an evolutionary context of the isolates.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
A Novel β-Propeller Protein Causes Mitotic Defects and Localizes to the Cytoplasm

**Student(s):** Elliot Rodriguez  
**Mentor(s):** Steven James  
**Description:** Our laboratory has identified a novel β-propeller protein (AN1056) in the fungal model Aspergillus nidulans. When deleted, mutants exhibit strong cold-sensitivity and severe mitotic defects at non-permissive temperature. In order to better understand the mechanisms underlying mitotic defects resulting from the protein’s absence, the wild-type gene was tagged at its C-terminus with fluorescent tags. We show here that AN1056 protein is distributed uniformly throughout cytoplasm.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

FSHR-1 and SKN-1 link Innate Immunity and Oxidative Stress

**Student(s):** Zoe Yeoh  
**Mentor(s):** Jennifer Powell  
**Description:** We are using C. elegans to study the innate immune system. FSHR-1 is a G-protein coupled receptor that plays a role in C. elegans immunity, while SKN-1 is a master regulator of the oxidative stress response. We would like to research the connections between FSHR-1 and SKN-1, if any, and their combined effects on the response to infection. By doing so, we can reach a better understanding about the innate immune system in C. elegans and apply this knowledge to other species.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Isolation and Identification of bacterial species from human skin and hair

**Student(s):** Gretchen Suter  
**Mentor(s):** Jennifer Powell  
**Description:** In a multi-week research project, microbes from the normal body flora were isolated, characterized and identified.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Isolation and Identification of Novel Human Microbial Life

**Student(s):** Kenneth Boyle  
**Mentor(s):** Jennifer Powell  
**Description:** Over the course of the semester, I worked to isolate microbes from my skin. Using complex microbiology techniques I successfully identified and named my strain of bacteria.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Isolation of a new strain of human bacteria found to be part of the skin surface microbiome

**Student(s):** Evan Bokma  
**Mentor(s):** Jennifer Powell  
**Description:** This project has focused on the isolation of a new strain of bacteria that was discovered on the human skin. It then analyses whether the bacteria is gram positive or gram negative, as well as its shape and other identifying properties, such as if it is an aerobic or anaerobic bacteria.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

The effect of antifoulant Medetomidine and SSRI Sertraline on development, behavior, and pigmentation in African clawed frog tadpoles (Xenopus laevis)

**Student(s):** Kathleen Paul  
**Mentor(s):** Peter Fong  
**Description:** I tested medetomidine, sertraline, and a combination of both on growth, behavior, and pigmentation of Xenopus laevis. In the 1st month, tadpoles in med. and combination showed delayed growth. In the 2nd month, sert. tadpoles grew more than controls. For behavior, exposure to med. and combo. resulted in decreased motion and a decreased response to a vibrational stimulus. For pigmentation, there was a decrease in grayscale in tadpoles exposed to med. but was regained after recovery in water.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Isolation, Characterization, and Identification of Novel Bacterial Isolates of the Human Skin Microbiome

Student(s): Kathleen Paul  
Mentor(s): Jennifer Powell  
Description: I began by sampling three areas of the skin, the dominant hand, the eyelid, and the upper ear cartilage. The samples were isolated into single colonies that were maintained throughout a three month period. The cell cultures were purified and multiple tests were performed on each novel species. To characterize and identify, I performed tests to determine the Gram status, metabolic qualities, cellular and colony morphology, antibiotic sensitivity and DNA sequencing.  
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Batrachochytrium dendrobatidis decreases the number of malformations in Southern Corroboree frog (Pseudophryne corroboree) spermatozoa: Evidence to support the terminal investment hypothesis

Student(s): Kyle Woodley  
Mentor(s): Michael Caldwell  
Description: Pseudophryne corroboree is a critically endangered frog species and appears to be susceptible to the effects of Batrachochytrium dendrobatidis (Bd). It is costly for an organism to fight disease, so investment in other life-history traits, such as reproduction, may be reduced. Alternatively, an organism can increase reproductive effort when threatened by disease, known as the terminal investment hypothesis. This study aims to determine if sperm morphology is affected by Bd.  
Time/Location: 4:30 PM-6:30 PM, Bream Gym
Isolation and characterization of three novel bacterial strains from Homo sapiens

**Student(s):** Kyle Woodley  
**Mentor(s):** Jennifer Powell  
**Description:** There are many species of bacteria in the normal human microflora and each species has a different role in this bacterial community. Different locations on the body can have various types of bacteria with a wide range of characteristics. This study aims to isolate, identify, and characterize these different microbes from the human microflora.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Differential sensitivity to the antifouling chemical medetomidine in wood frog and American toad tadpoles with evidence for low dose stimulation and high dose inhibition of metamorphosis

**Student(s):** Olivia Lambert, Emily Kurtz  
**Mentor(s):** Peter Fong  
**Description:** We exposed tadpoles to the antifoulant medetomidine. Wood frogs exposed to 1-10 µM were less developed compared to controls. In toads, medetomidine reduced percent activity and startle response. In wood frogs, it reduced percent activity, but increased startle response. In toads 10 µM was 100% lethal, but at the same concentration no wood frogs died. Lower concentrations were also lethal to toads, but those that survived in 10 and 100 nM metamorphosed sooner than those in 1 µM.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Examining Salmonella Diversity using CRISPR-SeroSeq

**Student(s):** Cameron Thompson  
**Mentor(s):** Nikki Shariat  
**Description:** Clustered Regularly Interspaced Short Palindromic Repeats, or CRISPRs, are a sequence of nucleotide elements found in Salmonella enterica. By utilizing the CRISPR spacers, these become a molecular barcode. This allows us to examine the Salmonella ecology of the poultry industry. We were able to confidently detect serovars down to low dilution, including separate strains. Based upon these results, it appears that CRISPR-SeroSeq is a powerful tool for the examination of Salmonella diversity.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

C. elegans cold shock recovery is mediated by thermosensation and stress response genes

**Student(s):** Leah Gulyas  
**Mentor(s):** Jennifer Powell  
**Description:** The ability to survive environmental stressors is important to ensure the reproduction and continuation of a species. While innate immunity, oxidative response, and heat shock response have all previously been studied in the model organism C.elegans, not much is known about how these organisms respond to cold shock. Here, we examine the contributions of thermosensation and canonical stress response genes in mediating acute cold shock response and survival.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Understanding the Role of the Type IX Secretion System in Chryseobacterium sp. Biofilm Formation

**Student(s):** Elliana Vickers, River Larson-Pollock  
**Mentor(s):** Zakiya Whatley  
**Description:** We explore the synergistic biofilm interaction between Microbacterium and Chryseobacterium using qRT-PCR to measure differences in gene expression based on lifestyle (planktonic vs. biofilm) and interbacterial interactions (homotypic vs. dual-species). We are focusing on expression of genes that encode the Type IX Secretion System (T9SS) and its cargo, which have been linked to gliding motility and biofilm formation in other members of the Bacteroidetes phylum.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Endophytic fungi and antipredator defenses in two neotropical tortoise beetles.

**Student(s):** Tiffany Lam  
**Mentor(s):** Paula Trillo  
**Description:** Tortoise beetle larvae use toxic fecal shields as a defense mechanism. We proposed that the toxicity of these shields stem from plant diet, and that the presence of endophytic fungus can impact this toxicity. Our study on A. sparsa and C. alternans beetles showed that the effect was dependent on the ant colony and the beetle species. Endophytes can influence plant chemistry but shield toxicity might be species specific. This may offer insights into multi-trophic interactions and pest-management.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
CRISPR-SeroSeq Bioinformatic Pipeline

**Student(s):** Alexandra Doak  
**Mentor(s):** Nikki Shariat  
**Description:** Salmonella is a leading bacterial foodborne pathogen and is a diverse species, represented by over 2500 distinct serovars. CRISPR-SeroSeq is a bioinformatic tool used for differentiating Salmonella serovars within a sample, based on CRISPR spacer content. We developed a pipeline where sequencing reads were compared to a Salmonella CRISPR spacer database using BLAST. A novel algorithm enabled us to call the serovars in a sample and display whether these calls were of high or low confidence.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

FSHR-1 and BLI-3: the effect of antioxidants on oxidative stress response and innate immunity in C. elegans

**Student(s):** San Luc  
**Mentor(s):** Jennifer Powell  
**Description:** The innate immune system is the first line of defense against pathogenic microbial. When pathogens are detected through pattern recognition or cellular damages, cell triggers responses, releasing chemicals, such as reactive oxygen species to fight against bacteria. In C. elegans, FSHR-1 has been previously known for its role in activating immune responses and detoxification processes. In this project, antioxidants were used to test the susceptibility of fshr-1 mutants on Pseudomonas aeruginosa.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Identification of bacteria isolating from human skin microflora

**Student(s):** San Luc  
**Mentor(s):** Jennifer Powell  
**Description:** Human skin are occupied with numerous of microbes that plays an important role in multiple functions and processes, such as regulating pathogen defense mechanism, or immunity related issues. However, with a constant growth of bacteria, at time, non-pathogenic bacteria can also cause serious health problem. For this reason, it is important to study about the human microflora. In this experiment, microbes from skin are isolated and analyzed to find its identity.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Investigating antibiotic resistance in low abundance Salmonella

**Student(s):** Erin Schroeder  
**Mentor(s):** Nikki Shariat  
**Description:** Although the development of CRISPR-SeroSeq has provided an enhanced view of Salmonella enterica serovars in a population, it cannot characterize underlying serovars by their antibiotic resistant profiles. While the current federal protocol for antibiotic susceptibility testing can only describe the most prominent serovar in a sample, our qPCR approach is capable of differentiating and determining antibiotic resistance of all serovars within a complex sample.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

What’s Living on My Skin?: Isolation and Identification of Cultured Human Microflora

**Student(s):** Devin McPeek  
**Mentor(s):** Jennifer Powell  
**Description:** My project was a lab research project in which I isolated and cultured three bacterial strains that were swabbed from my skin. I performed various tests to gather more information on each strain and identified the species of one of the three novel strains.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Identification and characterization of two new CRISPR-Cas systems associated with the mosquito microbiome

Student(s): Hallie Rauch  
Mentor(s): Nikki Shariat  
Description: Here, we have characterized two new CRISPR-Cas systems in bacterium Ag1 which has not been well characterized. We have identified three CRISPRs associated with Type 1-E and Type 1-F systems. All 13 cas genes are expressed during logarithmic growth. Phylogenetic analysis using Cas3 from each system in Ag1 show that the Type I-E system is related to Dickeya spp. and Klebsiella spp; the Type I-F system is related to Yersinia spp.  
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Presence of tRNAs in Erwinia amylovora Phage Genomes

Student(s): Alyssa Cassini, Nicole Carach  
Mentor(s): Nikki Shariat  
Description: Our research focuses on the presence and relevance of tRNAs, in E. amylovora phage. tRNAs transport amino acids to the ribosome during translation. Phage can encode their own tRNAs, to potentially increase the efficiency of translation of phage-specific proteins. We identified a single tRNA species present in half of our collection of E. amylovora phage genomes. We also grouped genomes based on tRNA content, and these groups matched whole genome sequence alignments analyses done by our peers  
Time/Location: 4:30 PM-6:30 PM, Bream Gym
Mowing the Lawn: Conservation and characterization of biofilm-busting EPS-D gene among Erwinia amylovora bacteriophage

**Student(s):** Katherine Estell, Abigail Deaven  
**Mentor(s):** Nikki Shariat  
**Description:** E. amylovora produces biofilm, which creates a barrier between phage and their bacterial receptor. Some phage encode an EPS depolymerase protein that allows them to penetrate this biofilm. This research reveals how necessary the EPS-D gene is for E. amylovora phage to infect their host. We identified four different families of EPS-D gene that were present in 46% of E. amylovora phage. We will continue to research how the phage acquired this gene, and the geographic distribution of this gene.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Where to Start? Analyzing Start Codon Usage and Predictory Upstream Sequences

**Student(s):** Gabriella Scolpino, Julia Clevinger  
**Mentor(s):** Nikki Shariat  
**Description:** A start codon is the first three base pairs of a gene that determines where the ribosome starts translating. Our project goals are identifying start codon frequencies in the genomes of three bacteriophage that target E. amylovora and subsequently determining whether start codon usage correlates with protein size and function. We also were interested in determining whether there were sequences upstream of the start codon that were conserved and related to a specific start codon sequence.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Better Together: Identification, Analysis, and Characterization of Beneficial Prophages in the Genomes of Several Erwinia Species

**Student(s):** Matthew Canonizado, Gyasu Bajracharya  
**Mentor(s):** Nikki Shariat  
**Description:** Four Erwinia species, Erwinia amylovora, Erwinia pyrifoliae, Erwinia billingiae, and Erwinia tasmaniensis, were analyzed using PHASTER to identify prophages. All four species contain multiple prophage. Using BLAST, similarity searches were performed among the prophage nucleotide sequences for each of the species and phylogenetic trees were constructed that suggested the presence of common ancestors containing those prophage.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Analysis of 60 E. amylovora phage

**Student(s):** Heyang Zhang, David Medina  
**Mentor(s):** Nikki Shariat  
**Description:** We are interested in learning how diverse E. amylovora phage are and whether they differ genetically with respect to the location from where they were isolated. In total, 60 phages were analyzed. Based on these alignments, there were 6 groups that contained phages from different locations, 4 groups that contained phage from only one of these locations. Future work will involve generating phylogenetic trees of phage that are in the same group but from different locations.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
One of These Phage is Not Like the Other: A Qualitative Comparison of Phage Genomes and Their Ancestry

**Student(s):** Haley Barnes, Sydney Jaramillo  
**Mentor(s):** Nikki Shariat  
**Description:** Bacteriophages are viruses that infect and kill bacteria. We isolated and characterized various *E. amylovora* strains. We determined that three of these phage were very similar. After aligning the start positions of 12 genomes, we analyzed them using a bioinformatics tool, MAUVE. Phylogenetic analysis showed two clear groups present among these 12 phage. We have identified many differences in the genomes and are currently analyzing these by looking for protein coding genes or tRNA.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Not Just Empty Spaces: Exploring Conserved Gaps in *Erwinia amylovora* Bacteriophage

**Student(s):** Alec Beck, Cara Hatzinger, Alexandra Yiambilis  
**Mentor(s):** Nikki Shariat  
**Description:** This study involves the examination of the relationships between small and large phage genomes based on their conserved gaps. We noticed that large gaps (>200 bp) appear between genes in many *E. amylovora* phage, particularly in large genomes. We determined the conservation of these gaps and interrogated their possible function. We will also be generating phylogenetic trees to further examine the relationship between gaps in *E. amylovora* phage genomes.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
The effect of Sertraline on the integration of predator cues across visual and chemical sensory modalities in Zebrafish, Danio rerio

**Student(s):** Lindsay Kraus  
**Mentor(s):** Paula Trillo  
**Description:** The objective of this research was to determine the effects of sertraline on the integration of information of predator cues across visual and chemical sensory modalities in zebrafish. It was hypothesized, that combined, the chemical and visual predator cues would enhance anti-predator behavioral responses. It was also hypothesized, with sertraline, the integration of the cues would produce similar but less intense antipredator behaviors, indicating an adverse effect from the drug.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**Chemistry**

**Smoking and Lung Cancer**

**Student(s):** Garrison Smith, Matthew Coe  
**Mentor(s):** Robert Garrity  
**Description:** This research describes the general mechanisms involved with cancer, more specifically, the direct links between smoking and lung cancer.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**Developing titanium and vanadium bound mini-metalloenzymes**

**Student(s):** Olivia Peduzzi, Alexander Paredes  
**Mentor(s):** Katherine Buettner  
**Description:** Metals susceptible to hydrolytic precipitation are avoided because of difficulty working with them in water. Utilizing these metals, like titanium and vanadium, in water can unlock new chemistry. Nature uses ligands that bind and stabilize Ti and V, to keep them soluble and control hydrolysis. We have made metal binding sites in de novo proteins to bind Ti and V. Initial studies show promise for Ti and V binding. These metal-bound proteins can mimic enzyme active sites, for future applications.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Toward the Synthesis of Cyclopentadienone Iron Tricarbonyl Compounds with Strong Electron Withdrawing Groups for Transfer Hydrogenation and Dehydrogenation

**Student(s):** Xintong Hou  
**Mentor(s):** Timothy Funk  
**Description:** Iron-based cyclopentadienone catalysts are characterized by low toxicity, natural abundance and low cost. In our study, an iron tricarbonyl compound with strong electron-withdrawing group has been successfully synthesized and the structure of the compound has been confirmed by carbon and proton NMR spectroscopy to help us further explore the effects of the strong electron-withdrawing group on the efficiency of the catalyst.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Quantification of Epicatechin Content in Brewed Cocoa: Factors that Influence Extract Efficiency

**Student(s):** Siyan Chen  
**Mentor(s):** Lucas Thompson  
**Description:** Cocoa is a common beverage that contains various nutritious substances like polyphenols that have been proven in recent years to be beneficial to people's health. Epicatechin is one of the polyphenols that we are more interested in. Using High-Performance Liquid Chromatography (HPLC), we have measured the amount of epicatechin in brewed cocoa samples. We aim to answer the questions that what factors affect the amount of epicatechin that can be extracted from cocoa.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Using pH to Drive Assembly of poly-L-lysine coated Gold Nanorods

**Student(s):** Fontaine McFeaters  
**Mentor(s):** Lucas Thompson

**Description:** Nanoparticles can be functionalized using a variety of biological molecules such as proteins, DNA, and peptides. One polypeptide in particular, poly-L-lysine (PLL), is used here to functionalize gold nanorods to explore how macromolecular structure on the surface impacts assembly. In this study, we are interested in seeing if the pH driven conformational change of PLL causes gold nanorods to assemble in a chiral fashion which will be the monitored with circular dichroism and UV-Vis spectroscopy.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Spectroscopic Quantification of Fluoxetine-loaded Polyacrylamide linked to the Surface of Gold Nanoparticles

**Student(s):** Richard Gawel  
**Mentor(s):** Lucas Thompson

**Description:** This work presents the attachment of the antidepressant fluoxetine (Prozac®) to the surface of gold nanoparticles and several spectroscopic methods used to quantify the number of drug molecules attached per nanoparticle.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Synthesis and Evaluation of a (Cyclopentadienone)iron Tricarbonyl Catalyst in Oxidative and Reductive Transformations

**Student(s):** Emily Harrison  
**Mentor(s):** Timothy Funk

**Description:** Traditionally, many organometallic catalysts have contained platinum-group transition metals, which are often expensive and potentially toxic. Thus, an area of growing research interest lies in the development of first-row transition metal catalysts that are inexpensive, benign, and still amenable to organic synthesis. We have synthesized a new (cyclopentadienone)iron tricarbonyl compound and assessed its catalytic activity in a series of organic redox transformations.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Can we quantitatively control polyelectrolyte adsorption onto gold nanoparticles?

**Student(s):** Aphra Murray

**Mentor(s):** Lucas Thompson

**Description:** Recent years have seen an exponential boom in the time and resources dedicated to research in the field of gold nanoparticle chemistry. The synthetically diverse morphologies of gold nanoparticles as well as the increased usage in commercial products have made them ideal candidates for research laboratories. In this work, the quantitative Layer-by-Layer deposition of polyelectrolytes onto the surface of CTAB capped gold nanoparticles is explored.

**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**Computer Science**

**Linking Washington DC Metro Map to Street Map**

**Student(s):** Laura Gessler

**Mentor(s):** Charles Kann

**Description:** Subway maps are a valuable navigational tool, but they have limited overall usefulness because the distance between stops is not scaled to their actual geographic distances. This project aimed to connect the DC metro map to a GIS map of the city by linking each stop on the metro map to its corresponding real-world location on a GIS map. This application was created using JavaScript and OpenLayers, and opens up further opportunities for enhanced functionality and development.

**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
**Mixed Logical and Probabilistic Reasoning in the Game of Clue**

**Student(s):** Ziqian Luo  
**Mentor(s):** Todd Neller  
**Description:** We analyzed how WalkSAT-like algorithm performs in estimating card position probabilities in Game of Clue. We examine different sampling algorithm design choices and observe their impact on sampling bias, by comparing our estimation outcome to the exact probabilities computed by a model-counting variant of our generalization of Knuth's Dancing Links algorithm to "at least" cardinality constraints.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

**CollegeAndYou.org**

**Student(s):** Ruiwen Fu, Sara Freed, Shaohua Tang, James Welch  
**Mentor(s):** Clifton Presser, Rodney Tosten  
**Description:** Our group created an Educational Tips website, CollegeAndYou.org. The website seeks to provide a dynamic and accessible platform for students to access tips previously written by an education professional. By providing users with the functionalities of saving their favorite tips and taking notes on where they should improve, the website aims to provide students with a tool to keep themselves accountable during their academic journey.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

**Anatomy of the Meltdown and Spectre attacks**

**Student(s):** Ruiwen Fu  
**Mentor(s):** Charles Kann  
**Description:** Meltdown and Spectre reveal the hardware vulnerabilities of modern computer. This project shows how programs use these hardware vulnerabilities to steal data from computers and how these concepts are used to implement Meltdown.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

**Deep Learning AI for Gin Rummy**
Student(s): Dung Truong
Mentor(s): Todd Neller
Description: Recent advancements in games, such as in Atari video games and go, has shown the application of a new technique called Deep Learning in Artificial Neural Network that is capable of producing impressive, even superhuman, AI player. To the best of our knowledge, there has been no paper published on using deep learning to build an AI player for the card game Gin Rummy. The goal of the research is to create an assisted Gin Rummy player using prediction made by neural network.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

BuBoard
Student(s): Zachary Miller, Michael Clark-Cuadrado, Jingyi Liu
Mentor(s): Clifton Presser
Description: A skeumorphic bulletin board application for announcing and following local events and announcements. Account subscriptions, sorting, and attachments all supported. A hyper-local twitter clone.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Building an Amazon Alexa Skill for Gettysburg Curriculum
Student(s): August Umholtz, Patrick Fay, Laura Gessler, Xiunan Yu
Mentor(s): Clifton Presser
Description: Our goal was to provide another option for searching through course offerings and major/minor requirements for students using an audio interface. We worked with the Amazon developer environment and became familiar with the steps for creating an Alexa Skill and sending it to the marketplace as well as how to effectively use AWS Lambda. The project used a number of languages including Java and Javascript, both for our Lambda function and formatting required data.
Time/Location: 4:30 PM-6:30 PM, Bream Gym
Automating and Simplifying the Process of 3D Printing

**Student(s):** James Arps, Dean Helwig, Ziqian Luo  
**Mentor(s):** Clifton Presser, Rodney Tosten  
**Description:** For our capstone experience in Computer Science, the 3D Printer Group set out to build a system which allows the user to control 3D Printers located in the West Building from anywhere in the world using a web app. We did this by connecting a small computer, called a Raspberry Pi, to the printers, as well as by using several other open-source programs. In our talk, we will discuss our development process, reflect on the challenges we experienced along the way, and showcase the final product.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Roads To Gettysburg Mapping Editor Project

**Student(s):** Patrick Fay  
**Mentor(s):** Charles Kann  
**Description:** Originally attempting to create an interactive web based map depicting the Confederate’s and Union’s moves leading up to the Battle of Gettysburg, this project evolved into creating a web based Map Editor that would allow a user to easily create an online version of a book and or story through an interactive map. This project utilizes the programing language Javascript and an open source Javascript library called OpenLayers.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

3D Printing, Virtual Reality, and Escape Rooms: How cutting edge technology can be used to foster team building

**Student(s):** Abagale Shope, Skyler Ehly, Lingji Wang  
**Mentor(s):** Clifton Presser  
**Description:** As part of the college’s new innovation and creativity lab in the West Building, we created a high-tech escape room where participants build their own clues using a 3D printer, a laser cutter, and a CNC machine.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Comparing Usabilities of Interface

**Student(s):** Jingyi Liu  
**Mentor(s):** Charles Kann  
**Description:** This individualized research with Professor Kann is focusing on improving the user interface of the series of map web applications (done by Professor Kann's previous students) by conducting usability tests with college students.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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Economics

Portfolio Optimization and the Single Index Model

**Student(s):** Hannah Hallos  
**Mentor(s):** Drew Murphy, John Cadigan  
**Description:** My research has focused on the use of the Single Index Model (SIM) to correctly produce an optimal portfolio. The SIM is a simplified version of the Markowitz Covariance Matrix and in theory is supposed to produce the same results. Through the use of Bloomberg, Excel and Stata, I have found through data analysis that in times of low market returns the SIM does not produce the same covariance as the Markowitz Model and therefore is unable to produce the optimal portfolio in this circumstance.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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The Dodd-Frank Act's effect on the U.S. Economy

**Student(s):** Delia Craig  
**Mentor(s):** John Cadigan  
**Description:** My research for my Honors Thesis in Economics is on the Dodd-Frank Act and how it asymmetrically affected bank profitability, based on size. There is highly politicized debate surrounding Dodd-Frank, and my econometric analysis adds quantifiable evidence to this debate. This question is important in understanding the role of regulation in post-crisis recovery, prevention of future crises, and in the financial economy as a whole.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
The effects of workplace gender and racial diversity on firm performance

Student(s): Ha Nguyen  
Mentor(s): Linus Nyiwul  
Description: My research looks at 140 American firms in the period of 2006-2012. I collected data on workplace gender and racial diversity as my independent variables and firm productivity as my dependent variable. I also control for firm size, industry, and job growth. Using a fixed effect model, I examine whether a more diverse workforce outperforms in productivity. I will also look at the interaction effects of industry and diversity.

Time/Location: 4:30 PM-6:30 PM, Bream Gym

A Macroeconomic Analysis of the Depression of 1921: A Rapid Recovery

Student(s): Caroline Valenti  
Mentor(s): Charles Weise  
Description: This project compares the Great Depression to the Depression of 1920-21. Specifically, it considers the Fed’s actions in 1920-21 versus 1929-33 and suggests that they were different due to flawed policy. My research suggests that the recovery was quicker in 1920-21 because the economy was allowed to recovery naturally.

Time/Location: 4:30 PM-6:30 PM, Bream Gym

Monetary Policy Transparency: A Counterfactual Analysis

Student(s): Thuc Anh Trinh  
Mentor(s): Charles Weise, Tsu-ting Lin  
Description: My honors thesis uses a macroeconomic model and computer program to conduct policy experiments. The aim is to understand the impact of different levels of monetary policy transparency to an economic system on its equilibrium state.

Time/Location: 4:30 PM-6:30 PM, Bream Gym
A Blunt Analysis: Marijuana Legalization and Racial Bias in Arrests

**Student(s):** Angelica Marra  
**Mentor(s):** James O'Brien  
**Description:** This study examines how the legalization of marijuana, both medical and recreational, affects racial bias both in arrests of marijuana and other low-level criminal offenses. This is done in an effort to determine if legislation has effects across criminal offenses in a policy-relevant way. The state-level analysis uses FBI crime-data and state demographic information in a series of econometric tests in an attempt to answer the research question.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**English**

**Taking a Knee: One Quarterback's Greatest Play**

**Student(s):** Justin Lessel  
**Mentor(s):** John Ryan  
**Description:** My project discusses the effects of politics in sports. I focus on the national anthem protests in the NFL and their impact on society.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**Enhancements in Sports: Friend or Foe?**

**Student(s):** May Lonergan  
**Mentor(s):** John Ryan  
**Description:** The project serves as an analytical and argumentative approach to Malcolm Gladwell’s essay, "Man and Superman." Throughout the essay, Gladwell forms an strong argument against genetic luck, and believes that performance enhancing drugs or surgical procedures lead to a just form of competition. My project focuses on the dangers and scandals of steroid usage in major athletic spheres such as the Olympics, NFL, and MLB.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Environmental Studies

Framing Yellowstone National Park: How the 1988 Wildfires and 1995 Wolf Re-introductions were framed in the Local and National News Media.

**Student(s):** Kevin Aughinbaugh  
**Mentor(s):** Randall Wilson  
**Description:** Both the 1988 Wildfires and 1995 Wolf Re-introductions were highly controversial events that took place at Yellowstone National Park. This project seeks to study how these events were described and framed in both local and national newspapers. By doing so, this project illuminates the differences in how local and national newspapers deal with controversial events in America’s oldest national park.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Examining the Effects of UAVs on the Behavior of Song Birds and the Ethical Use of Drones

**Student(s):** Kenneth Boyle  
**Mentor(s):** Andrew Wilson  
**Description:** In order to test the effect of our drone, the DJI Mavic Pro, I looked at whether or not the presence of the drone caused birds to move further away from the drone. Secondly, we investigated whether or not birds fell silent while the drone is hovering above the study array.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Measuring the Effects of Oyster Reefs in the Intertidal Zone using Sediment Elevation Tables (SET)

**Student(s):** Kimberly Corcoran  
**Mentor(s):** Wendy Piniak  
**Description:** We utilized Sediment Elevation Tables (SETs) to examine sediment level changes from the presence of oyster beds in the intertidal zone. To do this we compared rates of sediment elevation change at different sampling intervals. We found that presence of oyster reefs increased sediment levels and that SETs are a useful tool in intertidal environments, & provided additional data to understand the role of living shorelines in increasing coastal resilience to combat sea level rise and storm surges.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Conservation and Management Proposals for Alewife (Alosa pseudoharengus) and Blueback Herring (Alosa aestivalis) in the Choptank and Patapsco Rivers in Maryland

**Student(s):** Katherine Morfill, Sarah Finley, Ellery Lyon  
**Mentor(s):** Wendy Piniak  
**Description:** Alewife and blueback herring, collectively referred to as river herring, are considered a keystone species because of the important roles they play in coastal lakes. However in recent decades, river herring populations have declined significantly due to overfishing, pollution, and coastal bycatch. Our research analyzes species’ population dynamics in tributaries surrounding the Chesapeake Bay and offers recommendations for policy and management practices for river herring from our findings.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
A Quantitative Analysis of Cirques on Flateyjaruskagi, North Iceland

**Student(s):** Brittany Bondi  
**Mentor(s):** Sarah Principato  
**Description:** The purpose of this study is to quantitatively analyze cirques (a glacial landform) on a particular peninsula of Iceland by comparing their paleo-ELAs to other characteristics such as latitude, aspect, and distance to coastline. Cirques were identified using Google Earth and ArcGIS, and ArcGIS was used to determine cirque’s paleo-ELAs using three methods: cirque-floor technique, minimum-point technique, and THAR technique. The results are compared to other cirques regionally and globally.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Geomorphic evidence for a paleo-icestream near Bárðardalur, north Iceland

**Student(s):** Marion McKenzie  
**Mentor(s):** Sarah Principato  
**Description:** The properties of streamlined landforms and paleo-flow indicators in the valley of Bárðardalur in north Iceland were quantified using a combination of spatial analyses and fieldwork. Drumlins and mega-scale glacial lineations (MSGL) were identified using satellite imagery from Google Earth, the National Land Survey of Iceland (NLSI) Map Viewer, and from contours on the 5 m mosaic of the Arctic Digital Elevation Model (Arctic DEM).  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Health Sciences

The Effects of Acute Consumption of a Brewed Cocoa Drink on Endothelial Function

**Student(s):** Madison Caldwell, Aoife Schanche  
**Mentor(s):** Eric Noreen  
**Description:** The purpose of this study was to investigate the acute effects of a brewed cocoa drink on endothelial function in healthy adults. Near-infrared spectroscopy (NIRS) measurement of muscle myoglobin oxygen saturation kinetics following blood vessel occlusion can be used as a non-invasive marker for endothelial function. Myoglobin oxygen saturation kinetics of the digitorum profundus muscle following vessel occlusion was measured 90 min after subjects consumed either water or a brewed cocoa drink.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Central Corticotropin Releasing Factor Expression Following Experimental Traumatic Brain Injury

**Student(s):** Megan Dietz  
**Mentor(s):** David Petrie  
**Description:** Recent reports have described GI tract dysfunction following traumatic brain injuries but the mechanism causing these changes remains unknown. Corticotropin Releasing Factor (CRF) widely known as a stress hormone, is synthesized within the Paraventricular Nucleus and inhibits gastric motility. Oxytocin, reduces the consequences of stress, in particular by upregulating GI motility. This study looks for evidence of the role of CRF and oxytocin after TBI on gastric barrier dysfunction.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Assessment of Skeletal Muscle Nicotinamide Adenine Dinucleotide Concentrations in Rat Strains Exhibiting Different Levels of Play Behavior

**Student(s):** Anna Salmonsen, John Gentes, Sarah Smith  
**Mentor(s):** Josef Brandauer  
**Description:** Fischer 344 rats display reduced play behavior compared to other strains. To determine if skeletal muscle mitochondria may explain these observations, we assessed regulators of mitochondrial content and function: 1) nicotinamide adenine dinucleotide (NAD); 2) Nampt, a key NAD recycling enzyme; and 3) the NAD-dependent protein deacetylase SIRT3. While intracellular NAD levels were consistent between strains, NAD/SIRT3 differences suggest altered mitochondrial protein dynamics in these animals.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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**Interdisciplinary Studies**

**Cross-Cultural Comparisons of Schooling**

**Student(s):** Khemilla Kedarnath  
**Mentor(s):** Chloe Ruff  
**Description:** This poster will introduce arguments and conclusions from my capstone project. I will dissect student perceptions of school quality based on four domain; access to technology, curriculum, instruction, and environment. After assessing students perceptions on these domains, I will discuss how negative or positive feelings influence students’ performance either socially or academically.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Childhood Poverty: Facilitating Growth Through Art.

**Student(s):** Brittni Kane  
**Mentor(s):** Kathleen Cain  
**Description:** Poverty during childhood has a significant impact on behavioral and emotional development, learning, and individual expression. I am interested in researching the possibility for individual growth and improvement through the use of artistic means. To further investigate this idea, my project consists of a literature review and an art program that I am organizing with the children involved with the South Central Community Action Program.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

What Makes a Criminal: Comparing Case Studies of Serial Killers

**Student(s):** Andrea Near  
**Mentor(s):** VoonChin Phua  
**Description:** It is generally agreed that there is no exact template encompassing all serial killers; There may still be a relationship between certain factors and killing. This project uses the case studies of well-known/studied serial killers in order to produce a unique comparative analysis examining patterns of personality traits, biological factors, and social conditions that is not typically found, while also examining general theory surrounding the topic of serial killing and societal myths about it.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Exploring the Relationship Between Culture and Media through an Analysis of Vogue Magazine Advertising

**Student(s):** Brianna Eagen  
**Mentor(s):** Nathalie Lebon  
**Description:** Each day, more than six billion advertisements appear in magazines and account, on average, for fifty-two percent of magazine content. This research entails a cross-cultural analysis of advertising to help us understand how women and sexuality are used in advertisements. This analysis shows the sexual portrayal of women in Vogue fashion and beauty advertisements and how they differ cross culturally in The United States, China, Brazil, and France.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Mathematics

Counting Arithmetical Structures on Graphs

**Student(s):** Joshua Wagner  
**Mentor(s):** Darren Glass  
**Description:** Arithmetical structures are created by labeling the vertices of a finite graph so that each vertex is a divisor of the sum of its neighbors. The question is, given a specific graph, how many arithmetical structures does it have? In this poster, we look at graphs with a single vertex of degree three and find algorithms and patterns for computing each graph's arithmetical structures.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Music

An Analysis of John Barnes Chance’s Symphony No. 2 for Winds and Percussion

**Student(s):** Diego Rocha  
**Mentor(s):** Russell McCutcheon  
**Description:** John Barnes Chance’s Symphony No. 2 is a substantial yet overlooked work in the wind band repertoire. One might assume based on its frequency of performance that it does not match quality as Chance’s other works; however, I will demonstrate that this piece merits programming. By analyzing the work through the lens of set theory, its sophisticated use of pitch content and motivic development will be clear. This analysis will show the complexity of the piece and its worth as an educational tool.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

“Her”story: The History of Women Composers

**Student(s):** Lani Deatherage  
**Mentor(s):** Russell McCutcheon  
**Description:** Music composition is a very male-dominated field. Women are often discriminated against and rarely treated equally. My research focuses on the difficulties women composers have faced throughout history. I have also compiled a list of women wind band composers from 1996-present, including the name, date, length, and level of difficulty of their compositions.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Organization and Management Studies

Professor's Work-Family Balance and Job Satisfaction

Student(s): Elinor Groner
Mentor(s): Alice Brawley
Description: The relationship between the number of hours professors spend at work, the department they’re in, and job satisfaction was researched for this project. There are some variables within this topic, such as the number of students each professor has, and the number of paper assignments professors have to grade. For example, an English professor may have to grade long papers, while a math professor might just have to grade whether the right answer was produced.

Time/Location: 4:30 PM-6:30 PM, Bream Gym

Philosophy

Love Around the Corner: The nature of love in Plato's Symposium and how it relates to the timelessness of The Shop Around the Corner

Student(s): Lindsay Richwine
Mentor(s): Vernon Cisney
Description: My project researches the story that inspired cinematic hits like The Shop Around the Corner and You’ve Got Mail to determine how and why the story has stayed relevant over the 80 years it has been told. My research examines the concept of love as put forth in Plato's Symposium and how the story that has inspired these films incorporates these ideas.

Time/Location: 4:30 PM-6:30 PM, Bream Gym
Alfred Hitchcock's Vertigo and the Impossibility of Perfection

**Student(s):** Emma Padrick  
**Mentor(s):** Vernon Cisney  
**Description:** This project explores our society's futile quest for the perfect woman and specifically its manifestation in Alfred Hitchcock's 1958 film Vertigo in reference to Simone de Beauvoir's concept of the eternal feminine, Karl Marx's commodification theory, and Laura Mulvey's commentary on visual pleasure and narrative cinema. This unification of ideas helps to identify the fabric of our collective mentality that has persisted and is still reflected in cinema today.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

**Physics**

Collective gradient sensing in fish schools

**Student(s):** Aawaz Pokhrel, Julia Giannini  
**Mentor(s):** James Puckett  
**Description:** Throughout the animal kingdom, animals frequently benefit from living in groups. Models of collective behaviour show that simple local interactions are sufficient to generate group morphologies found in nature (swarms, flocks). However, individuals also interact with the complex noisy environment in which they live. In this work, we experimentally investigate the group performance in navigating a noisy light gradient of two unrelated freshwater species: golden shiners and rummy nose tetra  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Geant4 simulations of NIST beam neutron lifetime experiment

**Student(s):** Daniel Valete  
**Mentor(s):** Bret Crawford  
**Description:** Precise measurements of the neutron lifetime test the Standard Model of particle physics and the theory of Big Bang nucleosynthesis. The most recent uses of the two predominant experimental methods for determination of the lifetime do not agree with each other within their stated uncertainties. An improved experiment using the "beam" technique is in progress at NIST, with a precision goal of 0.1%. This study uses Geant4 simulations to reduce uncertainties in this experiment.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

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Political Science

All Men Are Not Created Equal: The Effects of Party Polarization on Ideological Positioning Regarding Wealth Redistribution

**Student(s):** Marley Dizney Swanson  
**Mentor(s):** Bruce Larson  
**Description:** Wealth redistribution was one of the most salient topics of the 2016 election. Bernie Sanders championed redistribution from the top 1% while Donald Trump campaigned on tax cuts for the middle-class. It is argued that both parties’ agendas are driven by the elites within them, who in turn polarize lower socioeconomic status (SES) party members. This research seeks to review the effects of polarization within each party on ideological positions regarding efforts to combat economic inequality.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Psychology

Effects of Sex, Social Isolation, and Ketamine on Stress Response

Student(s): Mary Bielicki, Ailema Crooks
Mentor(s): Stephen Siviy
Description: We examined sex differences of the behavioral effect of social isolation during adolescence in male and female Sprague-Dawley rats. Social isolation during adolescence has been implicated as a rodent model for anxiety and depression. After rodents were either isolated or group-housed, we studied the influence of sex in how treatment with ketamine, which has been used to treat depression in humans, would impact behavior in an elevated-plus maze paradigm.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

The effect of morphine on social play in adult F344 and Sprague-Dawley rats

Student(s): Alexa Arnold, Joseph DeCristofaro, Kaitlin Lewin
Mentor(s): Stephen Siviy
Description: We will examine the effects of morphine on social play in adult F344 and Sprague-Dawley rats. We will record pinning, pouncing, and time of social exploration to see if morphine increases the effects of social play. We expect genetic differences between the 2 strains. We are still working on this project.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Greek Bias: Differences in Bias of Greek-Affiliated and Non-Greek Affiliated Individuals

Student(s): Kaitlyn Helmstetter, Donald Roessler, Emma Shaughnessy
Mentor(s): Brian Meier
Description: Our study seeks to examine how individuals who are Greek-affiliated differ from students who are non Greek-affiliated in terms of implicit and explicit prejudice, including a handful of potential moderating variables such as in-group identification, perceived in-group inclusivity, and leadership positions within an organization.
Time/Location: 4:30 PM-6:30 PM, Bream Gym
Components of Integrated Threat Theory as Justification of Anti-Muslim Prejudice

**Student(s):** Kaitlyn Helmstetter  
**Mentor(s):** Kathleen Cain, Paul D’Agostino  
**Description:** Symbolic threat is a component of Integrated Threat Theory, defined as perceived differences/threats to one's belief systems, religion, or worldview. This study seeks to examine whether symbolic threat is used to justify anti-Muslim prejudice, specifically within in a job hiring context. Results may potentially elucidate a previously unexplored component of explicit anti-Muslim prejudice.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

The Impact of Body Movement on Time Perception and Organization

**Student(s):** Katherine Gilbert, Elizabeth Goss  
**Mentor(s):** Rebecca Fincher-Kiefer  
**Description:** Topolinski and Sparenberg (2012) found that participants turning a moveable crank clockwise showed more preference for novel events and were open to new experiences, while those turning the crank counterclockwise showed preference for familiarity. The current study attempted to replicate the openness to experience results but also tested more directly that clockwise movements represent time in the future whereas counterclockwise movements represent time in the past.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Psych321: The impact of media and eating disorders on state self esteem

**Student(s):** Morven Whalley, Colton Hott, Amy Whitsel  
**Mentor(s):** Kathy Berenson  
**Description:** We are conducting a psychology experiment that examines the participants state mood and presents them a media video, which displays either neutral or 'idea-body' images, as well as measuring the participants state self-esteem and eating disorder tendencies.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Sí or yes: Does language as a social cue affect monolingual preschoolers’ decision making in odor preferences?

**Student(s):** Cynthia Filgueira  
**Mentor(s):** Nathalie Goubet  
**Description:** This research explored the potential influence of language on decision making in odor preferences for monolingual English-speaking preschoolers. All of the children were instructed to view short movies, either with a Spanish or English-speaking actor showing either positive affect or negative affect toward an odor. We predicted an effect of language on younger children's rating of neutral and unpleasant odors, and that language serves as an important social cue in children’s decision making.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Cross-Ethnic Friendship Stories Could Reduce Bias in Predominantly White Preschool Children

**Student(s):** Natalie Purinton, Meredith Lowy, Taylor Ward  
**Mentor(s):** Kathleen Cain  
**Description:** This research tests the hypothesis that pictures-books depicting cross-ethnic friendships between a latino child and a white child will effectivitely reduce expressions of explicit anti-latino bias in predominantly white preschool children. This research in new in that it tests a younger demographic than existing research and is relevant to Gettysburg in which there is a large latino population.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Depressive Symptoms and Rejection Type Predicting Current Depressed Mood

**Student(s):** Brittni Kane, Raechyl Thieringer  
**Mentor(s):** Kathy Berenson  
**Description:** Our project consists of an experimental research study on the interaction between depressive symptoms and rejection type predicting current depressed mood.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Cold Hands, Cold Heart: The Effect of Physical Coldness and Instability on Perception of Warmth and Stability in Interpersonal Relationships

Student(s): Erin Sweeney, Cynthia Filgueira
Mentor(s): Rebecca Fincher-Kiefer
Description: The current study examined the way participants’ physical experiences influence their feelings toward their interpersonal relationships. Specifically, we examined how physical stability may affect participants’ feelings about relationship security and how temperatures may affect feelings about relationship closeness.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Real and Fantastical Main Characters in Children's Storybooks

Student(s): Elizabeth Cox, Sara Cooney
Mentor(s): Kathleen Cain
Description: The present study aims to examine the influence of a realistic and fantastical main character in a storybook on children's tendency to generalize causal relationships from a storybook to the real world.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Psych 316 Experiment - Cranna

Student(s): Julia Cranna, Shannon Gaffney
Mentor(s): Daniel McCall
Description: N/A
Time/Location: 4:30 PM-6:30 PM, Bream Gym

The Kiki-Bouba Effect: The Influence of Verbal Labels on Odor Ratings

Student(s): Caroline Groce, Alison Gorab, Emma Mugford
Mentor(s): Daniel McCall
Description: This study further explores the kiki-bouba effect by examining the influence of verbal labels on odor ratings.
Time/Location: 4:30 PM-6:30 PM, Bream Gym
Effect of Hand Cleansing and Goal Salience on Recall

**Student(s):** Carly Gustafson, Danielle Boyland  
**Mentor(s):** Rebecca Fincher-Kiefer  
**Description:** Dong and Lee (2017) found hand cleansing made a primed goal less mentally accessible, thus, we hypothesized that for participants primed with the goal of having a job, cleansing their hands would result in poorer recall of career-oriented words than for those who visually evaluated the product. However, we presumed this effect would be reduced for participants in the senior class due to the salience of their career-goals.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Emotion Recognition Abilities in Children

**Student(s):** Alexandra Krain, Elisabeth Wagner  
**Mentor(s):** Kathleen Cain  
**Description:** The purpose of the current study was to explore how children label emotions in basic or complex stories verbally and through drawings, as well as the association between these identification skills and behavior level of the child. After categorizing forty preschool children into two classifications, well-behaved and poorly-behaved, the participants were randomly assigned to one of two conditions, a basic or complex story describing five emotions: happiness, sadness, anger, fear, and surprise.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Effects of cross-fostering on vasopressin and oxytocin-positive cell density in the paraventricular nucleus of Fischer 344 and Lewis rats.

**Student(s):** John Gentes  
**Mentor(s):** Stephen Siviy  
**Description:** Social play is an important behavior for juveniles of many mammalian species. Deficits in social play can be partially attributed to neurological abnormalities, including changes in neurotransmitter production or function. Using an immunohistochemical approach, the expressions of oxytocin and vasopressin in the paraventricular nucleus of the hypothalamus were measured in a rat strain that exhibits reduced play behavior.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Music listening’s effects on ego depletion: First experimental evidence of the ego-replenishing effects of music.

Student(s): Douglas Kowalewski
Mentor(s): Brian Meier, Sahana Mukherjee
Description: This research focused on whether listening to one’s favorite song would help replenish the ego (ego depletion is a state where one experiences lowered self-control after a cognitively difficult task). To deplete participants, disgusting videos were shown while all reactions were self-suppressed. Participants’ persistence on a set of solvable/unsolvable anagrams served as the main measure of ego depletion. If ego-replenishing effects are found, it may help explain why we listen to music.

Time/Location: 4:30 PM-6:30 PM, Bream Gym

Effects of Feedback in Social Groups

Student(s): Jamie Relin, Kaleigh Johnson
Mentor(s): Kathleen Cain
Description: In our experiment, we used the WPPSI and the WISC to test 32 preschoolers motivational framework. Each participant took a simple puzzle from the WISC following a harder puzzle from the WPPSI and ended with taking an easier puzzle from the WISC. Two preschoolers will take this test at the same time, and one will receive person/process praise while the other will receive no praise. All participants will then complete questions regarding their motivational framework.

Time/Location: 4:30 PM-6:30 PM, Bream Gym
The Heart Wants What It Wants: Effects of Desirability and Body Part Salience on Distance Perceptions

Student(s): Celeste Campbell, Caroline DeWitt, Jason Heath
Mentor(s): Rebecca Fincher-Kiefer
Description: The current study examined the effects of body part salience (head or heart) and desirability on distance perception. We hypothesized that since common idioms relate the heart to desirability, salience of the heart would cause desirable objects to be perceived as closer than would salience of the head, but there would be no such difference between the head and heart conditions when the object was neutral.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Using a state self-compassion manipulation to reduce stigma toward mental disorders and their treatment.

Student(s): Jillian Glaze
Mentor(s): Kathy Berenson
Description: Stigma toward mental disorders and mental health treatments is a major barrier in getting help. This project examined the effects of a state self-compassion manipulation on participants’ willingness to seek mental health treatment and their internalized stigma toward people with mental disorders and their treatment options.
Time/Location: 4:30 PM-6:30 PM, Bream Gym

Turn off that Light: Examining the Effects of Time of Day and Methylphenidate on Social Approach

Student(s): Christopher Massos, Stefan Dudley
Mentor(s): Stephen Siviy
Description: Our study aimed to see the effects of time of day on social approach with different rat strains. We tested two rat strains during the day and night while observing how they would behave as a result. With the use of methylphenidate and social isolation we examined their effects on both strains during the two times.
Time/Location: 4:30 PM-6:30 PM, Bream Gym
The Influence of Friendship Types on the Children's Appraisal towards Gender-Typed Emotional Expression

**Student(s):** Qiqi Mei, Audrey Dannenbaum  
**Mentor(s):** Kathleen Cain  
**Description:** The main goal of this study is to examine how friendship types (same-gender or cross-gender interaction) influence preschoolers’ attitude towards peers’ emotional expressiveness that are either consistent or inconsistent with gender stereotypes.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

What is that Smell? Priming Effects in Odor Identification

**Student(s):** Alyssa Beyer, Casey Trattner  
**Mentor(s):** Daniel McCall  
**Description:** In our study, we looked to examine odor identification by priming participants with semantic cues that either belonged to the same semantic category or a different semantic category. Additionally, we manipulated the timing of when participants viewed the primes. We looked to see how the primes influenced odor ratings and odor identification.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Oh RATs! My Perfectionism is Showing: Predicting Socially Prescribed Perfectionism as a Function of the Interaction Between OCPD Symptoms and Social Pressure

**Student(s):** Brittany Maronna, Jillian Glazer  
**Mentor(s):** Kathy Berenson  
**Description:** Obsessive Compulsive Personality Disorder (OCPD) has a strong connection to perfectionism. This study looked at the interaction of socially prescribed perfectionism as a function of the interaction of OCPD symptoms and social pressure of an experimenter watching participants complete a challenging remote associates test (RAT).  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Dark Triad and Aggression after a Provocation

**Student(s):** Brittany Maronna, Allison Romano, Jessica Russo  
**Mentor(s):** Christopher Barlett  
**Description:** An analysis of the influence your personality on your aggression.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

The Dark Reality of a Dirty Conscience: The Effect of Immoral Acts and Lighting on the Desire for Cleanliness

**Student(s):** Ashley Van Hoof, Emily Redmond  
**Mentor(s):** Rebecca Fincher-Kiefer  
**Description:** Lee & Schwarz (2010) demonstrated that those that commit immoral acts are more likely to favor cleansing products relating to the modality in which they used to lie (mouth or hands) than those that committed moral acts. This research explores whether participants who tell a lie would rate cleanliness products as more desirable than neutral products, compared to those who tell the truth, and if room lightness would strengthen or reduce this effect.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

A Temporal Correlational Examination of Global Warming Consequences on Violence

**Student(s):** Caroline DeWitt, Jason Heath  
**Mentor(s):** Christopher Barlett  
**Description:** Aggression scholars hypothesize that global warming can cause violence for myriad reasons, but most of these predictions are based on correlational evidence assessing heat and violence over time in the US. The current study tested the link between global temperatures and violence while focusing on the serial mediating mechanisms that may explain such relationships. Data were gathered from the World Bank data base every year that the data were available from 1967-2016 to examine these effects.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Gender Biases and Toy Choice: Does Peer Interaction Affect Toy Choice?

**Student(s):** Mary Buckley, Elizabeth Delianites  
**Mentor(s):** Kathleen Cain  
**Description:** The development of gender differences is believed to arise through the interaction of both biological and sociocognitive factors that are encountered within the post-natal environment. In the present study, we use hypothetical scenarios to clarify the effects of gender biases on toy choice. Thirty participants, aged 36 to 60 months, will be administered various sets of gender-stereotyped colors of gender neutral toys and asked a series of questions regarding which toy they choose to play with.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Ketamine and Depression: Treatment Advances and Stigma

**Student(s):** Laura Gustafson, Huilin Xu  
**Mentor(s):** Kathy Berenson  
**Description:** We are interested in stigma surrounding the use of ketamine infusions as a treatment for depression, particularly for people who do not respond to traditional antidepressants. We surveyed people online with a diagnosis of depression, randomly assigning a first person or third person narrative of an account of use of ketamine for depression treatment. We measured general stigma towards drugs (e.g. Lexapro) and stigma surrounding ketamine infusion treatment before and after the narrative.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Fear (or lack thereof) of Retaliation and the Aggressive Response

**Student(s):** Cory Madison, Kaleigh Johnson  
**Mentor(s):** Christopher Barlett  
**Description:** Aggression theory indicates that ability to retaliate after a provocation likely influences the decision making process germane to predicting ensuing aggressive responding. In the current study, participants were either provoked (or not) by an ostensible partner before they got a chance to aggress. However, prior to measuring aggression, participants were told that their “partner” would, or would not, have the ability to aggress back.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Global Warming and Violence: Testing the Mediating Role of Sociological Factors

**Student(s):** Sarah Kirkpatrick, Emma Mugford  
**Mentor(s):** Christopher Barlett  
**Description:** Annual temperature and violence rates were analyzed for over 200 countries around the world between 1967-2016 to examine the effect of changes in global temperature on violence and, more importantly, why such relations are expected. Myriad sociological variables have been posited to explain this effect; however, very few have ever been tested in the literature. In the current research, we examined how global temperature changes cause aggression due to shifts in such mediators.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

**Religious Studies**

**International Black-Market Organ Trade**

**Student(s):** Marni Granzow  
**Mentor(s):** Charles Myers  
**Description:** My research focused on the global epidemic of the international black-market organ trade as people with a secure financial foundation travel to developing countries to find a potential organ donor. Citizens from these developing countries are targeted as those who experience severe poverty are more willing to donate due to the appeal of the financial compensation.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Spanish

El Desarrollo de la Ceta y la Falta de Uso en América Latina

**Student(s):** Stephanie Blair  
**Mentor(s):** Kent Yager  
**Description:** This investigation looks at the development of the ceta, a sound in Spanish that is commonly used in north and central Spain. The development of the ceta is analyzed through a look at the history of the Spanish language and the adaptations of various sounds. Furthermore, this investigation looks at why the ceta is not currently used in Latin America.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

La variación lingüística en dos generaciones de familias cubanas inmigrantes

**Student(s):** Emily Brown, Cynthia Filgueira, Kelli Rubin  
**Mentor(s):** Kent Yager  
**Description:** Our project examines linguistic variation in two generations of Cuban immigrant families. By conducting verbal interviews, we identified characteristics of "Cuban Spanish" that have persisted between generations.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

El efecto de la variación geográfica en la pronunciación de los mexicanos / The Effect of Regional Variation on Mexicans’ Pronunciation

**Student(s):** Celeste Campbell, Caroline Kostecky, Katherine Willis  
**Mentor(s):** Kent Yager  
**Description:** El español es la segunda lengua más hablada como lengua nativa en el mundo. Es lógico que una lengua tan extendida varíe mucho en su expresión. Para la clase de Español 380: "Los sonidos del español," nuestro grupo estudió un aspecto de la variación fonética que existe en español. Nos enfocamos en cómo la pronunciación de algunos sonidos específicos cambia a través de las zonas distintas de México. Entrevistamos hispanohablantes de este país para responder a nuestra pregunta de investigación.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
Christopher Paulus '18
Title – Tree-Pod
Medium – tree trunk, steel spikes, wood glue

Emily Whitcomb '18
Title – Laundry
(The Clothes He Raped Me In)
Medium – oil on canvas
Emily Reese ‘20
Title – Input Output: Bookcase
Medium – charcoal pencil on paper

Khun Minn Ohn ‘19
Title – Moné
Medium – digital photograph
La pronunciación de la /d/ en el español madrileño [The pronunciation of the /d/ in Madrileño Spanish]

**Student(s):** Erin Lanza  
**Mentor(s):** Kent Yager  
**Description:** In my investigation, I intend to study the maintenance, elision, and pronunciation of the /d/ in Madrileño Spanish— that is, the specific Spanish spoken among people native to Madrid, Spain. I will have my participants read a series of words, sentences, and larger sections of reading to determine if a level of formality affects the pronunciation or lack thereof of the phoneme /d/ in or between words. I will also consider extralinguistic factors such as social class, gender, and education.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

Phonetic variation that popular children’s media networks use to adapt scripts to the different Spanish dialects

**Student(s):** Quinn Igram, Caroline Glennon  
**Mentor(s):** Kent Yager  
**Description:** By analyzing popular children’s cartoons, movies, and television programs, this research will show how networks adapt and introduce dialects to children. With modern advancements, media networks are beginning to expose children to such linguistic variation.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym

El uso del español en Rio de la Plata / The use of Spanish in The River Plate

**Student(s):** John Garrett, Anthony Puca, Clay Tyeryar  
**Mentor(s):** Kent Yager  
**Description:** This project is going to analyze the use of Zheísmo and Sheísmo in The River Plate region of Argentina and Uruguay. Our interest as a group was ignited after learning about these two spoken variation. Now, we plan to further expand and focus our research on its development and its appropriate use in these two countries.  
**Time/Location:** 4:30 PM-6:30 PM, Bream Gym
FILM PRESENTATIONS  Saturday, May 5

Cinema and Media Studies

Breidenbaugh Hall 201, Joseph Theater
10:00 AM-12:00 PM

Behind the Ink

**Student(s):** Anna Malafronte  
**Mentor(s):** James Udden  
**Description:** Where do tattoos fit into our society? This film takes a closer look at the relationship several individuals have with their tattoos while also questioning body art and the role it plays in our culture. This film will go beyond the ink and uncover how having a tattoo and its meaning is much more than meets the eye.  
**Time/Location:** 10:00 AM-12:00 PM, Breidenbaugh Hall 201 Joseph Theater

How Different Generations Perceive Political News

**Student(s):** Elizabeth Hilfrank  
**Mentor(s):** James Udden  
**Description:** This film includes interviews with two people from the millennial generation, the baby boomer generation and the silent generation on how they received news during the 2016 presidential campaign period. The film was created in conjunction with a research paper that found millennial generation voters to use social media as a news source the most out of any generation. In this film one will see a comparison of each generation’s opinion about the media’s role in politics.  
**Time/Location:** 10:00 AM-12:00 PM, Breidenbaugh Hall 201 Joseph Theater
The Night Shift

Student(s): Jared Richardson  
Mentor(s): James Udden, Jeffery Williams  
Description: A short film by Jared Richardson.  
Time/Location: 10:00 AM-12:00 PM, Breidenbaugh Hall 201 Joseph Theater

THEATRICAL PERFORMANCE  Saturday, May 5  
Theatre Arts

Fefu and Her Friends

Student(s): Mairead Kress, Daphne Ellis, Jane Fitzpatrick, Katie Madore, Gauri Mangala, Nikoleta Mountanos, Abigail Pope, Camila Seluja, Thea Toocheck, Elisabeth Welch  
Mentor(s): Christopher Kauffman  
Description: This production of María Irene Fornés's "Fefu and Her Friends" was directed by Mairead Kress as an Independent Study in Directing, under the supervision of Professor Chris Kauffman. The ensemble has explored themes of gender, relationships, identity, and trauma through this play known for its unique staging, feminist themes, and an all-women cast.  
Time/Location: 2:00 PM-3:00 PM, Brua Hall 215 Stevens Theatre
PANELS  Saturday, May 6

Center for Public Service

Thinking Critically, Acting Compassionately: The CPS Student Program Coordinator Experience

**Student(s):** Holly O’Malley, Annette Aguilera-Gonzalez, Gisselle Flores, Morgan Hubbard, Erin Schroeder

**Mentor(s):** Gretchen Natter

**Description:** What does it take to create positive community change? How are individuals, communities and institutions impacted by participating in long-term social justice projects? Five Center for Public Service student program coordinators will share what they continue to learn through their involvement in informed action and critical reflection.

**Time/Location:** 1:15 PM-2:30 PM, Glatfelter Hall 103

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**Economics**

Multidisciplinary Panel: African Americans and White Americans in the Labor Market

**Student(s):** Leonard Ogozalek

**Mentor(s):** Brendan Cushing-Daniels, Charles Weise

**Description:** This paper analyzes differences between African Americans' and white Americans' employment and wages from 1990 to 2015. This is accomplished using data from the PSID and employing a Heckman sample selection model to examine if there are unexplainable racial differences in the labor market and if the racial gap in employment and wages has narrowed over this twenty five year period.

**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 311
Italian Immigration: A Study of the Impact of Age, Gender, and Nationality on Economic Opportunity in the Marche Region

Student(s): Luca Menicali  
Mentor(s): Brendan Cushing-Daniels  
Description: This project focused on the economic and social consequences of refugee immigration in his home country, Italy.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 205

English

Felicia Hemans and the Creation of the Poetess in the Romantic Age

Student(s): Madison Cramer  
Mentor(s): Leonard Goldberg  
Description: This project explores Felicia Hemans’s career as well as a detailed analysis of her 1828 collection of poems, Records of Woman. I focus on how Hemans uses her poetic persona (a domestic guardian of female domesticity) to clear space for female artists. In particular I examine her depictions of mourning, memorialization, and fame to see how she develops arguments about each of these to champion hybridity for female artists. I also talk about my experience as a researcher in the Kolbe Fellowship.  
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 205

German Studies

German Studies Capstone Presentations

Student(s): Jared Richardson, Aimee Bosman, Lauren Bradford, David Corradetti, Olivia Simmet  
Mentor(s): Henning Wrage  
Description: The final presentations of the German Studies senior seminar, The Culture of War. Conducted in English.  
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 311
Health Sciences

Skill Analysis of a Cellist's Posture and Bow Stroke

**Student(s):** Abigail Heydenburg  
**Mentor(s):** Renee Lehman  
**Description:** Playing the cello with appropriate posture and technique is vital to producing a good tone as well as protecting the musician from injury. Performing artists often practice up to eight hours a day, and thus can hold tension and develop bad habits if they are not aware of how they're positioned. This project will analyze the biomechanics of correct cello posture and a bow stroke from the frog of the bow to the tip.  
**Time/Location:** 10:15 AM-11:30 AM, Schmucker Hall 214

A Literature Review of Perceived Discrimination in Rural White Populations

**Student(s):** Amanda Richman  
**Mentor(s):** Amy Dailey  
**Description:** This project looked at a systematic literature review on the extent to which rural white populations experience discrimination and how those perceptions intersect with social class, race/ethnicity, and gender.  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 205

History

A Man’s World: A Comparative Analysis of the Formation and Leadership of Women’s Auxiliary Groups in World War II

**Student(s):** Renn Lemler  
**Mentor(s):** Michael Birkner  
**Description:** N/A  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 307
A Delirious Welcome to Anyone in Uniform

Student(s): Bridget Ashton  
Mentor(s): Michael Birkner  
Description: N/A  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 307

Between Two Worlds: Virginia Union University During World War II

Student(s): Jeffrey Lauck  
Mentor(s): Michael Birkner  
Description: In the midst of World War II, Virginia Union inaugurated its first African American president and erected the Belgian Friendship Building on campus. Additionally, rationing and low attendance plagued the university throughout the war. Virginia Union’s wartime experience offers a glimpse at the challenges and potential rewards that universities, and especially historically Black institutions, faced during the World War II era.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 307

"Avenging Furies": The Memoirs of American Women in the Philippines During the Second World War

Student(s): Meghan O’Donnell  
Mentor(s): Michael Birkner  
Description: A large and active resistance movement developed in the Philippines during the Japanese occupation of the islands from 1942-1945. This paper discusses the memoirs of several women caught up in these movements, specifically Claire Phillips, Margaret Utinsky, Yay Panlilio, and Virginia Hansen Holmes. I argue that these women utilized their memoirs to secure places for themselves in history, using gendered and racialized language to define their experiences as incredible adventures.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 307
Interdisciplinary Studies

Multidisciplinary Panel: Comparative Education Policy

**Student(s):** Kylee Davis  
**Mentor(s):** Kaoru Miyazawa  
**Description:** Comparative Education Policy is a professional development unit comparing the American and Australian education systems demonstrating the similarities and differences between these two systems. This panel will address the role of federal policy making in both systems and how it has affected the delivery of education. I will provide a sense of the extent to which education is conceptualized in each of these two countries as a public good and how that affects the way teachers teach.  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 311

War Studies

**Student(s):** Danielle Jones, Anika Jensen, Bradley Klustner  
**Mentor(s):** Ian Isherwood  
**Description:** Students conducted original research into memory studies of the First and Second World War. The research includes examining the intersections of gender studies and First World War studies in J.R.R. Tolkien’s legendarium, a history of the Washington D.C. monuments to the First World War as a case study of American commemorative practices surrounding the First World War, and an examination of experiences of American soldiers liberating concentration camps in the Second World War.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 307
**Music**

**Lagu Seriosa Indonesia: A Cultural and Thematic Contextualization of Indonesian Art Song**

**Student(s):** Nicole Densmoor  
**Mentor(s):** Susan Hochmiller  
**Description:** This research explores Indonesian art songs and their cultural context and value during the Indonesian revolution to the present day.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 205

**F*m*n*st: A Musical for Social Change**

**Student(s):** Elizabeth Buscher, Olivia Benson, Nicole Densmoor, Jasmin Eddy, Robert Napoli, Logan Santiago  
**Mentor(s):** Brent Talbot  
**Description:** F*m*n*st is a student-written, directed, and produced musical that brings misogyny in the music industry to light. In this presentation, we will do a screening of the musical, followed by a discussion of how sexism manifests itself in different ways and in different contexts.  
**Time/Location:** 10:15 AM-11:30 AM, Schmucker Hall 214

**Political Science**

**Tracking Public Support for Japan’s Remilitarization Policies: An Examination of Elitist and Pluralist Governance**

**Student(s):** Cory Madison  
**Mentor(s):** Frederick Gaenslen  
**Description:** Has Japan’s post WWII transformation into one of the most militarily capable nations been the result of 60 years of truly representative government? This research compares government-collected opinion polls to policy trends and actions, to determine whether the case of Japan’s remilitarization argues for or against the country’s democratic quality.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 205
Divergent State Investment Strategies for Funding Transportation: A Comparison of Four Geographically and Geopolitically Diverse States

Student(s): Patrick McKenna  
Mentor(s): Shirley Warshaw  
Description: This research focused on transportation policy across four geographically and geopolitically states, Missouri, Oregon, Pennsylvania, and Massachusetts.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 205

Religious Studies

Multidisciplinary Panel: Imagining the Scapegoat: Political Cartoons

Student(s): May Chou  
Mentor(s): Stephen Stern  
Description: An analysis of the use of political cartoons/caricatures in the shaping of public opinion, on the scapegoating of the “other” in society. In comparing the techniques used in anti-Semitic cartoons of the 1930s to present-day Islamophobic cartoon in the US and Europe, it will reveal similar tropes about the scapegoat-y and the accuser.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311

Sociology

Multidisciplinary Panel: An Exceptional Racism: How Swedes Talk About Ethnoracial Difference

Student(s): Jenny Enos  
Mentor(s): Cassie Hays  
Description: This project examines the language with which ethnoracial differences are described in Sweden, both in interpersonal speech and in media discourse.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311
Women, Gender, & Sexuality Studies

Women Gender & Sexuality Studies Capstone Presentations I
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 209

From Words to Activism: A Study of WOAR (Women Organized Against Rape)

Student(s): Laurel Downie
Mentor(s): Nathalie Lebon
Description: Considering research and critiques of the anti-sexual violence movement, my project analyzes documents published by Women Organized Against Rape (WOAR), an organization that still exists in Philadelphia today. Through a content analysis, I find that WOAR advocated for an end to sexual violence through messaging strategies tailored to a range of audiences.
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 209

Their Men, Our Women: A Discourse Analysis of Swedish Media Coverage of Sexual Assaults Committed by Men with Immigrant Background

Student(s): Jenny Enos
Mentor(s): Nathalie Lebon
Description: Recently, sexual assaults committed by men of immigrant background have received great public attention in Sweden. This research conducts a thorough analysis of newspaper articles surrounding two of these incidents of sexual assault to explore the processes through which notions of ethnoraciality, gender, and sexuality are intertwined in Swedish media discourse. The findings show that particularly in right-wing extremist media, the reporting is rife with ethnoracial bias towards the assailants.
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 209
Literary Analysis on Puerto Rican Sexual and Gender Discourse through a Colonial Lens

**Student(s):** Janeris Kelly  
**Mentor(s):** Nathalie Lebon  
**Description:** This paper uses a literary analysis to highlight the impact of American colonialism and Puerto Rican colonial history on sexual and gender discourse via an analysis of Sirena Selena Vestida de Pena (2000) by Mayra Santos-Febres and Mundo Cruel (2010) by Luis Negron. The norms involving sexual and gender discourse in the Caribbean are articulated and then deconstructed in these two literary works in an attempt to bridge knowledge on Caribbean colonialism and sexual and gender attitudes.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 209

Film Representation of the Ideology and Discourse around Women Leadership in the Workplace

**Student(s):** Jessica Martinez  
**Mentor(s):** Nathalie Lebon  
**Description:** Why are there so few women in corporate leadership positions? Women face many obstacles, in the workplace and in society at large, that hinder their ability to reach top managerial positions. This film analysis of The Wolf of Wall Street (2013) and The Intern (2015), explores the ideology and discourse surrounding women in the workplace regarding hegemonic masculinity, family-work life balance, and the glass ceiling phenomenon.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 209
Women, Gender, and Sexuality Studies Capstone Presentations II
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 209

Attitudes Toward Contraception Among Fourth Wave College-Aged Women

Student(s): Caroline Lewis, Alison Lauro, Emily Kaminsky, Emma Korowotny
Mentor(s): Nathalie Lebon
Description: This research is based in interviews with women on the Gettysburg College campus and the analysis of data on racial, geographic, and class disparities in health care/access in order to understand the politicization of contraception in women's lives. Reproductive health is highly politicized, yet college-aged/millennial women are not accustomed to an administration that attacks contraception and their access to it. In response to the current American political climate, we've seen an embracing of feminism in the mainstream media and feminist organization, such as the Women's March, but have yet to see any policy change. The question this has led me to explore is whether or not attacks on access to contraception will politically mobilize and unite women.
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 209

Access to Mental Health Care among Latina Women in Adams County

Student(s): Alison Lauro
Mentor(s): Nathalie Lebon
Description: The goal of this research is to distribute a survey to Latina women in Adams County to understand what barriers prevent them from accessing mental health services. The survey results show that low-income, immigrant, and undocumented women face greater challenges to accessing mental health because of lack of health insurance, transportation, language barriers, and the inability to afford healthcare.
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 209
Rhetoric Regarding Sex and Sexuality in Gettysburg Churches

**Student(s):** Emily Kaminsky  
**Mentor(s):** Nathalie Lebon  
**Description:** N/A  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 209

Gender and Food Access in Adams County: Food Provisioning, Identity Formation, and Survival

**Student(s):** Emma Korowotny  
**Mentor(s):** Nathalie Lebon  
**Description:** This project analyzes food access issues in Adams County within the setting of South Central Community Action Programs and the Gleaning Project through the collection of individual testimonies. Budget, time, transportation, and household composition emerged as common themes that affect food access and limit choice and agency, and also serve as a major influence in the process of food provisioning and identity formation, especially in terms of motherhood, parenting, and caregiving.  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 209
PORTFOLIOS  Saturday, May 5

Music

Schmucker Hall 222 Recital Hall
9:00 AM-10:00 AM

Music Student Teacher Capstone Presentation

Student(s): Edward Holmes
Mentor(s): Brent Talbot
Description: During this session, seniors in the Music Education program will be presenting their professional portfolios and websites in the Paul Recital Hall. Presentations will include materials from each student’s student teaching experience along with other resources from methods courses and professional development opportunities, organized into a portfolio and website.
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall

Music Student Teacher Capstone Presentation

Student(s): Karl Segletes
Mentor(s): Brent Talbot
Description: The culmination of the music education degree program consists of a fifteen week full-time internship in area school districts working under the guidance of mentor teachers. During this time pre-service teachers practice, refine, and reflect on teaching in a real classroom environment. In order to demonstrate this learning and growth, we collect artifacts to create a portfolio that illustrates who we are as music educators.
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall
Music Student Teacher Capstone Presentation

Student(s): Miranda Bubenheim
Mentor(s): Brent Talbot
Description: Music Education student teaching capstone portfolio presentation
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall

Music Student Teacher Capstone Presentation

Student(s): Chelsea Ferraro
Mentor(s): Brent Talbot
Description: The culmination of the music education program consists of a fifteen week full-time internship in area school districts working under the guidance of mentor teachers, practicing and reflecting on teaching in a real classroom environment. In an accompanying seminar, student teachers share experiences, prepare for interviews, and create a portfolio. The portfolio is a collection of artifacts from our 4 years in the music education program, and is meant to illustrate who we are as a music educator.
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall

Music Education Capstone Portfolio Presentation

Student(s): Isaac Hawkins
Mentor(s): Brent Talbot
Description: The culmination of the music education degree program consists of a fifteen week full-time internship in area school districts working under the guidance of mentor teachers. During this time pre-service teachers practice, refine, and reflect on teaching in a real classroom environment. In order to demonstrate this learning and growth, we collect artifacts to create a portfolio that illustrates who we are as music educators.
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall
Music Student Teacher Capstone Presentation

Student(s): Kelly Reymann  
Mentor(s): Brent Talbot  
Description: The culmination of the music education degree program consists of a fifteen week full-time internship in area school districts working under the guidance of mentor teachers. During this time pre-service teachers practice, refine, and reflect on teaching in a real classroom environment. In order to demonstrate this learning and growth, we collect artifacts to create a portfolio that illustrates who we are as music educators.  
Time/Location: 9:00 AM-10:00 AM, Schmucker Hall 222 Recital Hall
Kolbe Summer 2017 Research Fellows Panels

Kolbe Research Fellows Panel 1
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 205

Tracking Public Support for Japan’s Remilitarization Policies: An Examination of Elitist and Pluralist Governance

Student(s): Cory Madison
Mentor(s): Frederick Gaenslen
Description: Has Japan’s post WWII transformation into one of the most militarily capable nations been the result of 60 years of truly representative government? This research compares government-collected opinion polls to policy trends and actions, to determine whether the case of Japan’s remilitarization argues for or against the country’s democratic quality.
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 205

Felicia Hemans and the Creation of the Poetess in the Romantic Age

Student(s): Madison Cramer
Mentor(s): Leonard Goldberg
Description: This project explores Felicia Hemans’s career as well as a detailed analysis of her 1828 collection of poems, Records of Woman. I focus on how Hemans uses her poetic persona (a domestic guardian of female domesticity) to clear space for female artists. In particular I examine her depictions of mourning, memorialization, and fame to see how she develops arguments about each of these to champion hybridity for female artists. I also talk about my experience as a researcher in the Kolbe Fellowship.
Time/Location: 9:00 AM-10:15 AM, Breidenbaugh Hall 205
Lagu Seriosa Indonesia: A Cultural and Thematic Contextualization of Indonesian Art Song

**Student(s):** Nicole Densmoor  
**Mentor(s):** Susan Hochmiller  
**Description:** This research explores Indonesian art songs and their cultural context and value during the Indonesian revolution to the present day.  
**Time/Location:** 9:00 AM-10:15 AM, Breidenbaugh Hall 205

Kolbe Research Fellows Panel 2  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 205

Italian Immigration: A Study of the Impact of Age, Gender, and Nationality on Economic Opportunity in the Marche Region

**Student(s):** Luca Menicali  
**Mentor(s):** Brendan Cushing-Daniel  
**Description:** This project focused on the economic and social consequences of refugee immigration in his home country, Italy.  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 205

Divergent State Investment Strategies for Funding Transportation: A Comparison of Four Geographically and Geopolitically Diverse States

**Student(s):** Patrick McKenna  
**Mentor(s):** Shirley Warshaw  
**Description:** This research focused on transportation policy across four geographically and geopolitically states, Missouri, Oregon, Pennsylvania, and Massachusetts.  
**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 205
A Literature Review of Perceived Discrimination in Rural White Populations

**Student(s):** Amanda Richman

**Mentor(s):** Amy Dailey

**Description:** This project looked at a systematic literature review on the extent to which rural white populations experience discrimination and how those perceptions intersect with social class, race/ethnicity, and gender.

**Time/Location:** 10:30 AM-11:45 AM, Breidenbaugh Hall 205
Multidisciplinary Panel

Economics

Multidisciplinary Panel: African Americans and White Americans in the Labor Market

Student(s): Leonard Ogozalek  
Mentor(s): Brendan Cushing-Daniels, Charles Weise  
Description: This paper analyzes differences between African Americans' and white Americans' employment and wages from 1990 to 2015. This is accomplished using data from the PSID and employing a Heckman sample selection model to examine if there are unexplainable racial differences in the labor market and if the racial gap in employment and wages has narrowed over this twenty-five year period.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311

Interdisciplinary Studies

Multidisciplinary Panel: Comparative Education Policy

Student(s): Kylee Davis  
Mentor(s): Kaoru Miyazawa  
Description: Comparative Education Policy is a professional development unit comparing the American and Australian education systems demonstrating the similarities and differences between these two systems. This panel will address the role of federal policy making in both systems and how it has affected the delivery of education. I will provide a sense of the extent to which education is conceptualized in each of these two countries as a public good and how that affects the way teachers teach.  
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311
Religious Studies

Multidisciplinary Panel: Imagining the Scapegoat: Political Cartoons

Student(s): May Chou
Mentor(s): Stephen Stern
Description: An analysis of the use of political cartoons/caricatures in the shaping of public opinion, on the scapegoating of the “other” in society. In comparing the techniques used in anti-Semitic cartoons of the 1930s to present-day Islamophobic cartoon in the US and Europe, it will reveal similar tropes about the scapegoat-y and the accuser.
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311

Sociology

Multidisciplinary Panel: An Exceptional Racism: How Swedes Talk About Ethnoracial Difference

Student(s): Jenny Enos
Mentor(s): Cassie Hays
Description: This project examines the language with which ethnoracial differences are described in Sweden, both in interpersonal speech and in media discourse.
Time/Location: 10:30 AM-11:45 AM, Breidenbaugh Hall 311
ACKNOWLEDGEMENTS

Celebration ’18 would not have been possible if it weren’t for the efforts of a good many people on campus. For this reason, we wish to thank the following:

Instructional Technology: Gavin Foster, Bharath Srinivansan and John Whitehouse for facilitation of the online registration and scheduling processes and especially John Kovaleski for the program book layout;

The members of the Faculty who agreed to serve as Panel Facilitators;

Cathy Zarrella, College Scheduling Coordinator;

Kate Brautigam, Gene Hockley, and Stace Pickett, Ricoh Printing Services;

Ali O’Brien & Dean Anthony, Catering;

Facilities Services;

Student and staff volunteers;

Members of the Celebration ’18 Planning Committee: Jim Baer, Shannon Egan, Mallory Jallas, Craig Lair, Brad Lancaster, Halley Rauch ’20, Lily Shea ’21, and Carolyn Tuckey, for their continued support throughout the process;

And, most of all...
  The student presenters and their faculty mentors

Thanks to everyone for your efforts!

Maureen Forrestal and Paula Baer
Celebration ’18 Co-coordinators
**FRIDAY AND SATURDAY AT A GLANCE**

<table>
<thead>
<tr>
<th><strong>FRIDAY</strong></th>
<th><strong>12:00 p.m.–4:50 p.m.</strong></th>
<th><strong>4:00 p.m.–4:30 p.m.</strong></th>
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</thead>
<tbody>
<tr>
<td>Science Center 300</td>
<td>Globalization Studies Capstones</td>
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<tr>
<td>Breidenbaugh Hall Steps</td>
<td></td>
<td>Medieval Drama Presents: May the Farce Be with You!</td>
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<td><strong>4:30 p.m.–6:30 p.m.</strong></td>
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<td>Poster Session: Bream Gym</td>
<td>Biology</td>
<td>Environmental Studies</td>
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<td>Health Sciences</td>
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<td>Computer Science</td>
<td>Interdisciplinary Studies</td>
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<td>Economics</td>
<td>Mathematics</td>
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<td>English</td>
<td>Organization &amp; Management Studies</td>
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<tr>
<td><strong>SATURDAY</strong></td>
<td><strong>9:00–10:15 a.m.</strong></td>
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<td>Breidenbaugh Hall, 201, Joseph Theater</td>
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<td>Film Festival</td>
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<td>Breidenbaugh Hall, 205</td>
<td>Kolbe Summer ’17 Fellows I</td>
<td>Kolbe Summer ’17 Fellows II</td>
</tr>
<tr>
<td>Breidenbaugh Hall, 209</td>
<td>Women, Gender, and Sexuality Studies Capstone Projects I</td>
<td>Women, Gender, and Sexuality Studies Capstone Projects II</td>
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<tr>
<td>Breidenbaugh Hall, 307</td>
<td>War Studies</td>
<td>The US and WWII</td>
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<tr>
<td>Breidenbaugh Hall, 311</td>
<td>German Studies</td>
<td>Problems in Contemporary</td>
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<td>Capstone Presentations</td>
<td>Society Mixed Panel</td>
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<td>Brua Hall, 215, Stevens Theatre</td>
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<td>Fefu and Her Friends</td>
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<td>Glatfelter 103</td>
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<td>Thinking Critically, Acting Compassionately: The CPS Student Program Coordinator Experience</td>
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<td>Schmucker 214</td>
<td>10:15 a.m. – 10:30 a.m.</td>
<td>10:30 a.m.- 11:30 a.m.</td>
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<td>Skill Analysis of a Cellist’s Posture and Bow Stroke</td>
<td>P<em>m</em>n*st: A Musical for Social Change</td>
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<td>Schmucker Hall, Recital Hall</td>
<td>9:00 a.m. – 10:00 a.m.</td>
<td>Music Student Teacher Capstone Presentations</td>
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