

**Fifth Annual**

Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**



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**September 21, 2013**

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**Order of Events**

***Morning events take place in Rock Hall.***

**8:30 - 9:00 Registration**

**9:00 - 9:15 Welcoming Remarks**

**9:15 - 10:00 Panel 1: “Research Expectations of New Faculty”**

Panel Chair: *Zebulon V. Kendrick, Vice Provost, Graduate School*

Panelists: *Gregory Anderson, Dean, College of Education*

*Lee Baker, Dean of Academic Affairs of Trinity College of Arts and Sciences and Associate Vice Provost for Undergraduate Education, Duke University*

*C. Hamil Pearsall, Assistant Professor, Geography and Urban Studies, College of Liberal Arts*

*William Wuest, Assistant Professor, Chemistry, College of Science and Technology*

**10:00 - 11:00 Performances from the Schmieder Studio**

Introductions: *Eduard Schmieder, Laura H. Carnell Professor of Violin, Boyer College of Music and Dance*

Accompanist: *Yoni Levyatov, piano*

<b>Performer and Instrument</b>	<b>Music Selection</b>	<b>Composer</b>
Akhmed Mamedov, violin Adelya Shagidullina, viola	<i>Passacaglia</i> for violin and viola	Handel-Halvorsen
June Jeong, violin	<i>Valse-Scherzo</i> for violin and piano	Tchaikovsky
Xuan Yao, violin	<i>iPalpiti</i> for violin and piano	Paganini
Yoni Draiblate, cello	<i>Caprice No. 24</i> for solo cello	Paganini (transcr. Starker)
Joseph Kauffman, violin Yoni Draiblate, cello	<i>Heimat Terra</i> for violin and cello (1993)	Sollima
Samuel Nebyu, violin	<i>Carmen Fantasie</i> for violin and piano	Waxman
Azer Damirov, violin	<i>Smoke Gets in Your Eyes</i>	Kern (arr. Frolov)
Yeseul Ann, violin	<i>The Easy Winners</i>	Joplin (arr. Frolov)

**11:00 - 11:15 BREAK**

**11:15 - 12:00 Panel 2: “Academic and Non-Academic Opportunities Following Graduation”**

Panel Chair: *Kimmika Williams-Witherspoon, Associate Professor, Theater, Center for the Arts/Division of Theater, Film and Media Arts*

Panelists: *Karen Addison-Williams, Parent Advocate*  
*Gregory Anderson, Dean, College of Education*  
*Lee Baker, Dean of Academic Affairs of Trinity College of Arts and Sciences and Associate Vice Provost for Undergraduate Education, Duke University*  
*Sandra Suárez, Associate Professor, Political Science, College of Liberal Arts*

**12:00 - 12:30 The Changing Ecosystem of Scholarly Communication: Forces, Factors, Opportunities, Challenges, and Conundrums**

*Joseph Lucia, Dean of Temple University Libraries*

**Afternoon events take place in Tuttleman Learning Center.**

**12:30 - 1:30 LUNCH and Poster Review**

**1:30 - 2:30 Graduate Student Poster Presentations  
3<sup>rd</sup> Floor Hallway**

*Azeb Gebre, Psychology*  
*Kimberly Jacoby, Chemistry*  
*Megan Jennings, Chemistry*  
*Kayleigh Jones, Chemistry*  
*Giuseppina Lamberti, Mechanical Engineering*  
*Nicole Lounsbury, Pharmaceutical Sciences*  
*Quynh Nguyen, Chemistry and TU-MARC U\*STAR Program*  
*Quam Onigbanjo, Bioengineering*  
*Garvin Peters, Chemistry and TU-MARC U\*STAR Program*  
*Christiana Teijaro, Chemistry*  
*Vincent Tu, Biology and TU-MARC U\*STAR Program*  
*Jay Veras, Chemistry and TU-MARC U\*STAR Program*

**CONCURRENT SESSIONS:**

**2:30 - 4:00 Graduate Student Film Showcase  
Room 101 –**

Faculty Discussant: *Zebulon V. Kendrick, Vice Provost, Graduate School*  
*Madeleine Hunt-Ehrlich, Film and Media Arts – A Gentleman’s War (17:30 min.)*  
*Malia Bruker, Film and Media Arts – Heirloom (26:00 min.)*  
*Michael Johnston, Film and Media Arts – A Man Full of Trouble (22:00 min.)*  
*David Romberg, Film and Media Arts – Man of the Monkey (trailer – 5:30 min.)*

**2:30 - 4:00 Graduate Student Oral Presentations  
Room 301 –**

Faculty Discussant: *Wesley Roehl, Professor, Tourism and Hospitality Management, School of Tourism and Hospitality Management*  
*Bradley Baker, Business Administration/Tourism and Sport*  
*Ashley Brenner, Urban Education*  
*CiAuna Heard, Sociology*  
*Heather Waters, Music Education*



**Room 302 –**

Faculty Discussant: *Svetlana Neretina, Assistant Professor, Mechanical Engineering,  
College of Engineering*

*Line Francine Kouecheu, Mechanical Engineering*

*Kaveh Laksari, Mechanical Engineering*

*Jernelle Miller, Biology and TU-MARC U\*STAR Program*

*Andrew Powell, Electrical and Computer Engineering*

*Alexis Rylander, Bioengineering and TU-MARC U\*STAR Program*

**Room 304 –**

Faculty Discussant: *Kimmika Williams-Witherspoon, Associate Professor, Theater,  
Center for the Arts/Division of Theater, Film and Media Arts*

*Jonathan Gagas, English*

*Tiffany Lynn Hunt, Art History*

*Marija Krtolica, Dance*

***Tyler School of Art hosts the end-of-day event.***

**4:00 - 4:45 REFRESHMENTS and  
Art Show in Tyler Café  
and Glass-Blowing Observation**



Graduate Fellows  
at Temple University  
are as diverse  
as the global population.

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**List of Participants**

<b>Graduate Fellow Presenter</b>	<b>Department/Program</b>
Yeseul Ann	String Pedagogy
Bradley J. Baker	Business Administration/Tourism and Sport
Ashley Brenner	Urban Education
Malia Bruker	Film and Media Arts
Azer Damirov	Violin Performance
Yoni Draiblate	Cello Performance
Jonathan Gagag	English
Azeb Gebre	Psychology
Kyle D. Gilroy	Mechanical Engineering
CiAuna Heard	Sociology
Tiffany Lynn Hunt	Art History
Madeleine Hunt-Ehrlich	Film and Media Arts
Kimberly Jacoby	Chemistry
Megan Jennings	Chemistry
June Jeong	Violin Performance
Michael Johnston	Film and Media Arts
Kayleigh E. Jones	Chemistry
Joseph Kauffman	Violin Performance
Line Francine Kouechou	Mechanical Engineering
Marija Krtolica	Dance
Kaveh Laksari	Mechanical Engineering
Giuseppina Lamberti	Mechanical Engineering
Yoni Levyatov	Piano Performance
Nicole Lounsbury	Pharmaceutical Sciences
Akhmed Mamedov	Violin Performance
Jernelle Miller	Biology and TU-MARC U*STAR Program
Samuel Nebyu	Violin Performance
Quynh Nguyen	Chemistry and TU-MARC U*STAR Program
Quam Onigbanjo	Bioengineering
Garvin Peters	Chemistry and TU-MARC U*STAR Program
Andrew Powell	Electrical and Computer Engineering
David Romberg	Film and Media Arts
Alexis L. Rylander	Biology and TU-MARC U*STAR Program

<b>Graduate Fellow Presenter</b>	<b>Department/Program</b>
Adelya Shagidullina	Viola Performance
Christiana Teijaro	Chemistry
Vincent Tu	Biology and TU-MARC U*STAR Program
Jofiel "Jay" Veras	Chemistry and TU-MARC U*STAR Program
Heather Waters	Music Education
Xuan Yao	Violin Performance
<b>Other Student Participant</b>	<b>Department/Program</b>
Francine Affourtit	Printmaking
Md. Raqibul Alam	Pharmaceutical Sciences
Jaad Asante	Film and Media Arts
Caitlin Baiduc	Anthropology
Jorge Ballinas	Sociology
Robert Bingham	Dance
Scott Bruce	Statistics
Nicolaos Catsis	Political Science
Davinah Childs	Urban Education
Egon Cohen	Religion
Kwesi Daniels	Geography and Urban Studies
Clinton Davis	Geography and Urban Studies
Lisa Diehl	Speech, Language and Hearing Science
Amanda DiLodovico	Dance
Hyunji Doh	Media and Communication
Manna Duah	History
Jacob Hammes	Sculpture
Ming Ju	Business Administration/Finance
Jennifer Kim	Sociology
Sidney Lingle	Film and Media Arts
Mengmeng Liu	Marketing
Meaghan MacPherson	Bioengineering
Rebecca Ott	Fibers and Materials Studies
Luca Pallucchini	Mathematics
Deryck Pearson	Biomedical Sciences
Comfort Wasikhongo	Painting
Danfeng Xie	Electrical and Computer Engineering
Chi Zhang	Business Administration/Finance
Kaining Zhi	Pharmaceutical Sciences
<b>Faculty / Staff / Guest</b>	<b>Affiliation</b>
Alice M. Abner	Program Coordinator, Graduate School
Karen Addison-Williams	Parent Advocate
Gregory M. Anderson	Dean, College of Education
Lee D. Baker	Dean of Academic Affairs of Trinity College of Arts and Sciences and Associate Vice Provost for Undergraduate Education, Duke University
Dana Dawson	Program Director, Office of Scholar Development
Cynthia Harmon-Williams	Budget Manager, Graduate School
Zebulon V. Kendrick	Vice Provost, Graduate School
Joseph P. Lucia	Dean, University Libraries

<b>Faculty / Staff / Guest</b>	<b>Affiliation</b>
Svetlana Neretina	Assistant Professor, Mechanical Engineering
C. Hamil Pearsall	Assistant Professor, Geography and Urban Studies
Kathryn Petrich	Director of Graduate Information, Graduate School
Wesley Roehl	Professor, Tourism and Hospitality Management
Eduard Schmieder	Laura H. Carnell Professor of Violin
Sandra Suárez	Associate Professor, Political Science
Kimmika Williams-Witherspoon	Associate Professor, Theater
William Wuest	Assistant Professor, Chemistry



Graduate Fellows  
at Temple University  
have a network  
of support  
that allows them to thrive.

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**Biography:**

**KAREN ADDISON-WILLIAMS**

Karen Addison-Williams joined the Graduate School in 1988 and was a part of Temple University for over 11 years, filling several roles. Early on, she served as Graduate School Recruiter and then as Director of Graduate Recruitment and Coordinator of the newly developed Future Faculty Fellows Program. At the end of her tenure with the university, Addison-Williams served as Director of the FFF Program and Undergraduate Science Initiatives, dividing time between the Graduate School and the Provost's Office. Her commitment has always been to help in whatever way possible to ensure that students are successful as they navigate the academic maze. During her time with the FFF Program, Addison-Williams searched the greater part of the country seeking outstanding candidates interested in earning terminal degrees and entering the professoriate in content areas where they were underrepresented, either by ethnicity or gender.

In 1999, after the birth of her second child, Addison-Williams left the Graduate School to be a stay-at-home mom, a job she has treasured for the last 14 years. Realizing there was much to be done in her local school district, she has been an active volunteer for over 12 years. Formerly she served as President of the elementary school's Parent Faculty Club and the district's Parent Club Council. Currently, Addison-Williams serves as a parent liaison to the Superintendent through the district's Collaborative Action Group and on the Policy and Family Engagement sub-committees of the district's school board. She works to be an advocate for all Norristown Area School District children and parents, and to empower parents to advocate for themselves in order to help their children achieve greater academic success. In a similar vein, Addison-Williams also serves on the Pennsylvania Governor's State Parent Advisory Council, looking at a wide range of educational issues affecting school-aged children and their families across the state, most notably, the value and benefit of parental involvement and quality family engagement.

Addison-Williams has served in many capacities over the years. However, her most important and rewarding job has been that of mother and first teacher to her two sons: Omari, age 17, and Khari, age 14. She resides in East Norriton, Montgomery County, PA, with her husband Jeff and sons.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Biography:****GREGORY M. ANDERSON**

Gregory M. Anderson is the dean of Temple University's College of Education, which is a national center of excellence in both teaching and research with two departments: one focusing on K-12 education, and the other on psychological, organizational, and leadership studies, including adult and organizational development, higher education, and psychological practices in education. The college has more than 60 faculty members, over 1,300 undergraduate students, and nearly 600 graduate students. The college's graduate programs are ranked No. 47 in the 2014 *U.S. News & World Report* Best Graduate School rankings.

Previously, Anderson served as dean of the Morgridge College of Education at the University of Denver. During that time, he led the college to national recognition by supervising the completion of a new \$21.4 million facility and introducing new department structures, degree offerings, and a comprehensive faculty governance system, while sustaining and enhancing community, district, and government partnerships in Colorado. During his tenure, he spearheaded a major transformation of the college's faculty and student body, resulting in 20 new faculty hires, including four endowed chairs/professors, and significant increases in enrollments and tuition revenue. Under his leadership, Morgridge College's student body and faculty became the University of Denver's most diverse among graduate units and its largest single producer of sponsored research grants in 2012-13.

Anderson served on the Colorado Governor's Early Childhood Leadership Commission; the board of directors for the Institute for the Study of Knowledge Management Education; and the board of trustees of the Colorado Legacy Foundation. He also served on the Expanded Learning Opportunities Commission for the Colorado Department of Education and the Global Cities Education Network representing Denver alongside the Superintendent of Denver Public Schools.

Before joining the University of Denver in 2009, Anderson was an associate professor at the Program in Higher and Postsecondary Education at Columbia University's Teachers College. In 2006, he was granted an extended leave from Teachers College to become the higher education policy officer in Educational Opportunity and Scholarship programs at the Ford Foundation in New York. At Ford, he was responsible for overseeing one of the largest portfolios at the foundation, which featured both international and domestic higher education grants. Anderson also sat on the foundation's executive committees of multi-foundation partnerships and foundation-wide initiatives involving the United States, Africa, Central and Latin America, and Asia. In 2008, he was appointed by the vice president of the foundation's Knowledge, Creativity and Freedom Program Division to lead a strategic planning team responsible for developing a new vision guiding U.S. and international higher education programming.

**Source:** Hillel Hoffmann's article posted in Campus News by the Temple University Office of University Communications on June 3, 2013.



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**Biography:**

**LEE D. BAKER**

Lee D. Baker serves as the Dean of Academic Affairs of Trinity College of Arts and Sciences and Associate Vice Provost for Undergraduate Education at Duke University. In these roles, he is responsible for undergraduate curricular and instructional programs, as well the Academic Advising Center, the Academic Resource Center, the Focus Program, the Office of Assessment, the Office of Summer Session and Continuing Studies, the Office of Undergraduate Research Support, and the Service Learning Program.

At Duke, Baker has worked to make advising more effective for undergraduates. This past year he developed a new approach to certificate programs that integrates academic and experiential learning. He was also instrumental in the development of the new global health major launching in Fall 2013. Baker also continues to support changes in science education. Toward this end, he has worked with departments to strengthen introductory and gateway science courses to improve student success.

Baker currently holds an appointment as professor in the departments of Cultural Anthropology, Sociology, and African and African American Studies at Duke. His outstanding teaching ability was honored in 2007 with the receipt of the Richard K. Lublin Distinguished Undergraduate Teaching Award. In 2013, he was awarded a Samuel Dubois Cook Award in recognition of his effective teaching and mentoring.

Baker earned his B.S. in Anthropology from Portland State University and his M.A. and Ph.D. degrees from Temple University. He arrived at Duke in 1995 as an Assistant Professor of Cultural Anthropology. From 1997 to 2000, he taught at Columbia University. Baker returned to Duke in 2000.

**Source:** Article posted on DukeToday by the Duke University Office of News and Communication on May 23, 2013.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Biography:****JOSEPH P. LUCIA**

Joseph P. Lucia is Dean of University Libraries at Temple University. He has responsibility for overseeing all of Temple's nine libraries — including those at Temple University Japan and Temple University Rome — as well as Temple University Press. He is also charged with leading a major program of library development, including the construction of a new signature building on Main Campus that will connect the university with the greater Philadelphia community. The Temple University Libraries system has an aggregate budget of \$24 million, including \$13 million for collections, and employs approximately 50 professional staff, 70 support staff, and 40 full-time-equivalent student assistants. From 2004 to 2011, Temple University Libraries rose from No. 83 to No. 57 in the Association of College and Research Libraries rankings.

From 2002 to 2013, Lucia served as university librarian and director of Falvey Memorial Library at Villanova University. In that roll, Lucia spearheaded a number of initiatives that earned national attention, including the establishment of a campus-wide community reading program; the development of open source discovery software; the creation of a substantial digital library hosted on locally built open source digital library software; the establishment of open access publishing initiatives featuring university-sponsored journals supported by library development teams; the creation of a multi-disciplinary Learning Commons in Falvey as part of a series of renovations; and the development of an active cultural and intellectual events agenda. As a result, Villanova's Falvey Memorial Library received the 2013 Academic Libraries Award from the Association of College and Research Libraries.

From 2009 to 2012, Lucia served as a member of the board of trustees of Lyris — the nation's largest non-profit regional membership organization serving libraries and information professionals. He was Lyris' founding president from 2009 to 2010. He currently serves on both the board of Pennsylvania Academic Library Consortium, Inc. and the board of the Catholic Research Resources Alliance.

Prior to his arrival at Villanova in 2002, Lucia served as director for library technology and access services within Information Resources at Lehigh University.

Lucia holds an M.L.S. degree from Syracuse University, an M.A. in English from the University of Toronto, and a B.A. in English from McGill University in Montreal.

**Source:** Hillel Hoffmann's article posted in Campus News by the Temple University Office of University Communications on April 10, 2013.

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## **Biographies for the Schmieder Studio**

### **EDUARD SCHMIEDER, Laura H. Carnell Professor of Violin**

Born and educated in Russia, Eduard Schmieder has been characterized as an “extraordinary musician of the late 20<sup>th</sup> century” (Henry Roth, *Violin Virtuosos: From Paganini to the 21<sup>st</sup> Century*, 1997). As artist and teacher, he amalgamates and creatively transforms the great traditions of American and European art. He maintains a concert schedule as conductor and violinist and teaches an internationally selected class of students, who have won top prizes at the most prestigious international competitions; have established careers as soloists and chamber musicians; and hold leading positions in orchestras in Europe, Asia, and the United States. Schmieder himself has performed in prestigious concert halls worldwide and has collaborated with such musicians as Martha Argerich, Erick Friedman, Ida Haendel, Yehudi Menuhin, Jon Kimura Parker, Brooks Smith, and Tsuyoshi Tsutsumi. In 1996, he performed a recital in Genoa on Paganini’s famous Guarneri del Gesu “Il Cannone” violin.

Schmieder was formerly the Distinguished Algur H. Meadows Chair of Violin and Chamber Music in the Meadows School of the Arts at Southern Methodist University in Dallas, TX (1990-2006) and a tenured professor of violin at the University of Southern California, the position previously held by Jascha Heifetz. In addition, Schmieder has taught master classes in virtually every foremost conservatory in the world. Since 2004, he has been on the faculty at the Mozarteum International Summer Academy in Salzburg, Austria. He also frequently serves as a jury member for leading international competitions such as ARD, Lipizer, Paganini, Queen Elisabeth, Sarasate, and Sibelius. He is the recipient of numerous awards for his accomplishments as a musician and as a teacher and for invaluable contributions to culture.

### **YESEUL ANN, Violinist**

Yeseul Ann was born in Seoul, Korea. She studied with Roland Daugaréil at the Conservatoire National de Région de Paris and at Conservatoire National Supérieur de Musique de Paris with Régis Pasquier and Philippe Aiche. Yeseul received her M.M. degree at the Yale School of Music with Ani Kavafian. She has also worked under the mentorship of the Ysaye Quartet, as well as Itamar Golan and Vladimir Mendelssohn. She has attended master classes with Ida Haendel, Mauricio Fuks, and the Julliard Quartet.

Yeseul has performed as a soloist and chamber musician in New York at Steinway Hall and in Paris at Cathédrale Saint-Louis, l’Eglise d’arménie, Palais Bourbon Assemblée Nationale, Salle Cortot, and Salle Pléyel. She has been awarded the Prize of Honor in the Bellan International Competition, third prize at the FLAME Competition in France, and prizes in various competitions in Korea.

As an orchestral musician, Yeseul has participated in numerous Festivals in France, Germany, Italy, and Switzerland, including the Ensemble Intercontemporain with Pierre Boulez. She has participated in academies at l'Orchestre de Paris with Christophe Eschenbach, Paavo Jarvi, and Essa Pekka Salonen; with the Asian Philharmonic Orchestra; and with the soloists of the Radio France Philharmonic Orchestra with Myung-whun Chung. She has been an associate member of the Civic Orchestra of Chicago and is currently a member of the Allentown Symphony.

### **AZER DAMIROV, Violinist**

Azer Damirov is the laureate of numerous violin competitions, including Andrea Postacchini International Violin Competition in Fermo, Italy; American Protege International Competition, New York; and a special iPalpiti prize for participation in the iPalpiti Festival of International Laureates in Los Angeles. As a winner of the American Protege International Competition, Azer performed at the Carnegie Hall in 2012.

### **YONI DRAIBLATE, Cellist**

Israeli-born cellist Yoni Draiblate began his musical education at the age of 5, entering the conservatory at the age of 7. He has performed in such venues as Barbican Theatre, the Berliner Philharmoniker, Disney Hall, Jordan Hall, Luzern Festival, Royal Albert Hall, Stockholm Festival, Boston's Symphony Hall, Teatro Colon, and many more. He appeared as a soloist with the Buchman-Mehta Symphony, Israel Kamerata, Israel Philharmonic, Tel Aviv Soloists Ensemble, and more. Yoni had collaborated with musicians such as Daniel Barenboim, Pierre Boulez, Gustavo Dudamel, Kurt Mazur, Zubin Mehta, and others.

Yoni participated in master classes and coaching with Bernard Greenhouse, Natalia Guttman, Frans Helmerson, Gary Hoffman, Laurence Lesser, Heinrich Schiff, Janos Starker, Uzi Wiesel, Alban Berg Quartet, Borromeo Quartet, Shanghai Quartet, and many others. He earned his bachelor's degree from the Buchman-Mehta School of Music in Tel Aviv and his M.M. degree from the New England Conservatory. A versatile musician, Yoni enjoys a performing career that includes many other genres of music, including jazz, pop, and rock.

### **JUNE JEONG, Violinist**

Born in 1996, June Jeong is currently an undergraduate violin performance major at Temple University, studying with Dr. Schmieder. June received first prize at many Korean national competitions, won the Temple University Concerto Competition in 2012, and received third prize at the "Remember Enescu" International Violin Competition in 2013 in Romania. She also performed a solo recital at the Kumho Prodigy Concert and participated in Hanna Chang's "Absolute Classic Orchestra" in South Korea.

### **JOSEPH KAUFFMAN, Violinist**

Joseph Kauffman graduated from the Pennsylvania State University in 2008 with a B.M. in Violin Performance. Upon completion of his studies, he was honored to receive the Creative Achievement Award given out to one exceptional student. He also began his master's program under Dr. Schmieder at Temple University. Upon completion of his master's program in 2010, he was awarded the Albert Tashjian Prize.

Joseph is the winner of the Beene, Kroulik, and Brewster competitions in Pennsylvania and also received first prize in the PSU Philharmonic Concerto Competition in 2008. Joseph founded the “Valens” Piano Quartet, which earned first prize in the MTNA Chamber Music Competition.

## **YONI LEVYATOV, Pianist**

Yoni Levyatov is a Russian-born Israeli pianist and composer, who hails from a musical family. Born in St. Petersburg, he has pursued piano studies at the Manhattan School of Music and Temple University. His teachers have included Constance Keene, Solomon Mikowsky, Jerome Rose, Harvey Wedeen, and Alexander Volkov. Since 1990, he has been a scholar of the America-Israel Cultural Foundation.

Yoni made his New York concerto debut in 2005 performing the Schumann Piano Concerto under the baton of Philippe Entremont. In 2006, he made his Lincoln Center recital debut at Alice Tully Hall. *The New York Times* reported that “the performance, as a whole, had an appealing electricity.” In 2008 and 2009, he was a soloist with the Manhattan Chamber Orchestra and, in 2011, with the New York Concert Artist Symphony. In 2011 and 2012, Yoni toured Alaska, performing at the Sitka Music Festival and the Juneau Jazz and Classics. Recently, he has been heard in Bogota, Colombia, with the Bogota Philharmonic and in California with the Nova Vista Symphony. Yoni has also appeared at Alaska Pacific University, Anchorage; Auditorium de Cajacanarias, Tenerife, Spain; Jerusalem Music Center and the Tel Aviv Museum of Art, Israel; Menor Hall, Manchester, England; Musical Instrument Museum, Phoenix, AZ; Philharmonic Hall, St. Petersburg, Russia; the Prestige Series at IKIF, Mannes School of Music, New York; Spiegelsaal, Rheinsberg, Germany; St. Mary’s College of Maryland; Steinway Hall, Barge Music, the United Nations; and Thornton School of Music, USC, San Francisco.

Yoni received the Dorothy McKenzie Artist Recognition Award (New York) in 2001 and 2004; the Clairmont Prize (Tel Aviv) in 2003; and the Harold Bauer Award (New York) in 2005 and 2006. He was the Silver Medalist at the International Boesendorfer Piano Competition in 2008 and won the International Russian Music Competition in 2011.

## **AKHMED MAMEDOV, Violinist**

Akhmed Mamedov started to play violin at the age of 7. In 2005, he graduated from Saratov State Conservatory. After being in the Artist Diploma Program at Temple University for two years, he was accepted into the M.M. Program with Dr. Schmiieder in Fall 2013.

During his studies, Akhmed actively participated in class and departmental concerts, both solo and in chamber and string quartet ensembles. From 2006 to 2008, he won the contest for participation in the Youth Symphonic Orchestra of Povoljye and performed on tours with the orchestra. In 2007, Akhmed won first premium of the third regional contest of violinists named by N.A. Goldenberg. Also in 2007, he was awarded a stipend of the foundation “Russian Performing Art,” VI stipend-premium program “Golden Talent” (2007-2008). Since 2008, Akhmed has participated in the project “Youth Symphonic Orchestra of CIS Countries.” During this period, he has worked with such conductors as M. Gorenshtein, Y. Simonov, and V. Spivakov. In 2009, Akhmed participated in the first international contest of violinists named by Yu I. Yankelevich. In 2010, he won a diploma in the fifth Demidov International Contest of Violinists. In 2013, he won a grand prix on the fourth regional contest of violinists named by N.A. Goldenberg.

## **SAMUEL NEBYU, Violinist**

Born in Hungary, Samuel Nebyu is of African American and Jewish European descent. He is the first prize winner of the FLAME Competition in Paris (2012) and the “Remember Enescu” International Violin Competition in Romania (2013). Samuel performed at the Eilat Music Festival in Israel; the prestigious Mozarteum Festival in Salzburg, Austria; and in concert venues such as the Centre of Fine Arts in Brussels, The Peles Castle in Romania, the Kimmel Center in Philadelphia, and Alice Tully Hall in New York. He entered the Brussels Royal Conservatory at age 15, studied with Professor Boris Kuschnir in Vienna, and was violinist-in-residence at the Queen Elisabeth Music Chapel in Belgium.

## **ADELYA SHAGIDULLINA, Violist**

Adelya Shagidullina is a graduate of the Kazan State Conservatoire. She is a student of Dr. Schmieder at the Boyer College of Music and Dance, where she received her artist diploma, bachelor's degree, and master's degree. Adelya is first prize winner of the International Music Competition in Togliatti, Russia (2007); winner of the second prize at the All Russian Music Competition (2005); and first prize winner and recipient of a special prize at the international J.S. Bach competition (2003), among others. Named Fellow of the Art Department of Russia (2003-2006) and Fellow of Russian Performing Art (2007-2008), Adelya has performed in Moscow, Saint Petersburg, and extensively throughout her native Tatarstan and its capital, Kazan.

Selected as a principal violist of numerous youth international orchestras such as the International Youth Symphony of Commonwealth of Independent States and the Russian and European Symphony Orchestra under direction of prominent conductors, such as Yuri Simonov, Adelya has been working professionally in the Kazan State Chamber Orchestra “La Primavera” and the Kazan State Symphony Orchestra. She was selected to join the iPalpiti chamber orchestra for its East Coast residency in 2009, and has since performed in concerts at Carnegie Hall in New York, Disney Concert Hall in Los Angeles, Kimmel Center in Philadelphia, and on tour in Northern California. In September 2013, Adelya was offered to become a member of Symphony in C and Bay Atlantic orchestras.

## **XUAN YAO, Violinist**

Xuan Yao graduated in 2010 from the Central Conservatory of Music in Beijing, China. She is majoring in Violin Performance at Temple University under Dr. Schmieder.

## **How Sport Brands Conform to Marketing Empirical Generalizations**

**Bradley J. Baker<sup>1</sup>, Heath McDonald<sup>2</sup>, Daniel C. Funk<sup>1</sup>, and Daniel Lock<sup>3</sup>**

<sup>1</sup> **Department of Sport and Recreation Management, School of Tourism and Hospitality Management, Fox School of Business and Management, Temple University;**

<sup>2</sup> **Faculty of Business and Enterprise, Swinburne University of Technology;**  
and <sup>3</sup> **Griffith Business School, Griffith University**

*Mentor: Daniel Funk*

Two key law-like patterns — the double jeopardy law and the duplication of purchase law — have consistently been found to explain and predict consumer behavior across a wide range of industries. It is speculated that these empirical generalizations may not hold in the case of professional team sport brands. Reasons given include the passionate loyalty of sport fans, the fact that two teams must be consumed at once in any contest, and strong geographic dominance of sport brands.

Two studies were undertaken to directly test the applicability of marketing generalizations to the sport context. The first study looked at actual attendance behavior as a primary form of sport consumption. Attendance data obtained directly from the governing body of the Australian Football League included individual game-by-game attendance of 3,006 spectators for a total of 91,915 games over three seasons. Observed behavior was compared to theoretic predictions generated by a Dirichlet statistical model. The second study looked at favored brands (teams) and whether the common practice of having a “second team” follows established laws. Data was used from a nationally representative panel of 17,132 adult Australian respondents. Patterns of reported first- and second-team preference and preference combinations were analyzed.

With a few caveats, the law-like patterns hold, suggesting that sport team brands operate in line with what we know about other consumer markets. The results suggest the unique aspects of the sports market may not impact meaningfully on spectator behavior, and question the theoretical assumption that sport brands should be managed differently.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Transformative Learning Through Education Abroad:  
A Case Study of a Community College Program****Ashley Brenner****Department of Psychological, Organizational, and Leadership Studies in Education,  
College of Education*****abrenner22@gmail.com******Mentor: Corrinne Caldwell***

This case study examined how participating in a short-term education abroad program fostered transformative learning for a small group of community college students. Few studies have provided rich descriptions of community college students' experiences abroad since these students comprise a slight but growing percentage of undergraduates abroad.

The study's goal was to examine how and why participating in a study abroad program, even though short-term, could be transformative for community college students in a large mid-Atlantic city. Ethnographic methods, including interviews, observations, and document analysis, were used to understand students' experiences abroad. Utilizing the constant comparative method of Glaser and Strauss (1973), systematic data collection and analysis occurred continuously. The transformative learning model for service learning (Kiely, 2005) served as a frame through which to analyze participants' experiences in a two-week program in Peru that involved taking intensive Spanish courses and living with a host family. The following questions guided the research: How do participants describe their perceptions of their experiences studying abroad? How do participants' biographies impact their perceptions of their experiences?

In this presentation, key themes emerging from the analysis of the data are discussed. These themes identify critical personal and programmatic elements that promoted or inhibited learning and link them to Kiely's learning model, particularly to the connecting and contextual border-crossing processes. This study's findings may contribute to the extant literature on the transformative potential of short-term study abroad programs and may inform community college administrators and faculty as they design and implement education abroad programs.



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Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**

***Heirloom***  
(26:00 minutes)

**Malia Bruker**

**Department of Film and Media Arts,  
Center for the Arts/Division of Theater, Film and Media Arts**

*Heirloom* is a humorous and poignant essay documentary about the aging of the most politically engaged generation in recent American history: the baby boomers. Themes of nostalgia, activism, community, and cynicism are explored through archival material, home movies, and observational footage of the director's parents filmed in 2012 during a four-month road trip across the United States.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Beginning with the End in Mind: How Formalism Helps Humanities  
Students Develop Lasting, Transferable Skills After the Recession****Jonathan Gagas****Department of English, College of Liberal Arts***[jongagas@temple.edu](mailto:jongagas@temple.edu)**Mentor: Daniel O'Hara*

In this story of developing a successful Temple course on fiction and modern culture, education consultant Grant Wiggins's technique of backward curriculum design, or beginning with an image of how one's students will have changed and what skills they will continue to value and thus use after taking one's course, is used to explain how the course objectives were narrowed to four, all related to critical reading and effective writing and speaking. It is argued that formalism, the study of unity and complexity, provides humanities teachers with an efficient strategy for linking critical reading of narrative to controlled, purposeful writing about it, and helps teachers focus all course activities on these goals by building scaffolding to help students develop the skills necessary to achieve them. Formalism in curriculum design offers a pragmatic response to the post-recession environment of greater teaching loads, larger class sizes, and students working more hours outside of class. It is further argued that this methodology allows teachers to hone in on a few abilities at the heart of the humanities and balance the responsibility to develop inclusive pedagogy with the precise focus made especially necessary by the recession. Since such a rigorous approach also requires students to care about the course objectives, trust each other, and limber up their imaginations, strategies for building in explorations of identity and collaborative, multisensory learning are offered. The narrative draws on both pedagogical theory and student feedback to suggest methods for bridging humanities traditions and the realities of the contemporary university.

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**Social Networking Behaviors: Minority College Students' Perspectives**

**Azeb Gebre and Ronald D. Taylor**

**Department of Psychology, College of Liberal Arts**

***azeb.gebre@temple.edu***

***Mentor: Ronald Taylor***

The widespread use of social media among college students has prompted scholars from disparate disciplines to inquire about the effects on students' social and emotional well-being. Previous studies show that use of social networking sites (SNS) increases social capital, academic engagement, and perceived available resources for support (Junco, 2012; Steinfield, Ellison, & Lampe, 2008). SNS use is also linked to reduced loneliness, greater life satisfaction, and positive social adjustment (Burke, Marlow, & Lento, 2010; Mikami, Szewedo, Allen Evans, & Hare, 2010). Despite the large number of studies conducted on SNS, very few have focused on ethnic minority college students. This study sought to fill the gap in the literature by examining two social networking behaviors — forming and maintaining relationships and seeking information about campus events — of African American, Asian, and Hispanic college students and their relations to perceived stress, self-esteem, anxiety, and college adjustment.

The study sample consisted of 74 females and 34 males, with a mean age of 20.9 years. Approximately 57% of the participants were African American, 28% Asian, and 16% Hispanic. The findings revealed that the use of SNS for information seeking was negatively associated with perceived stress. Neither social networking behavior was significantly related to self-esteem. However, relational development and maintenance via SNS was negatively correlated with anxiety. Also, both social networking behaviors were associated with successful college adjustment. Developing and maintaining social relations were linked to college adjustment through its association with anxiety. The findings suggest that online social networking may be invaluable for positive college adjustment because SNS provide easy access to social support and information about campus social events. Furthermore, the use of such sites reduces perceived stress and anxiety that may hinder the success of ethnic minority students.

This research was supported by the First Summers Research Initiative (FSRI) Award provided by the Temple University Graduate School.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Nanoengineering of Single Crystal Substrate-Based Nanoshells****Kyle D. Gilroy****Department of Mechanical Engineering, College of Engineering***kyle.gilroy@temple.edu**Mentor: Svetlana Neretina*

Innovations in modern-day sensor technologies rely on engineering of materials on the nanoscale. In order to accomplish this task, new protocols are necessary to generate highly organized surfaces with optimized morphologies. This study presents a technique used to fabricate periodic arrays of substrate-based hollow nanoparticles using galvanic replacement reactions (GRRs).

Galvanic replacement is a chemical reaction that occurs when atoms of a solid metal, referred to as the template, react with the ions of a second metal in the solution phase. This study shows that the atomic mechanisms by which the template particles empty are primarily related to the directionality of the crystal facet planes. Protocols can be tuned in order to have control over smoothness, faceting, and size of the nanoshell produced. The nanoshells have much potential for advancing surface-enhanced Raman spectroscopy (SERS), infrared sensor technology, and nanoelectronic devices. More importantly, they serve as an excellent platform for studying the nanoscaled behavior of GRRs.

Morphologic and compositional changes were recorded using a series of techniques, including Atomic Force Microscopy (AFM), Energy Dispersive Spectroscopy (EDS), High Resolution Scanning Electron Microscopy (HRSEM), Selected Area Electron Diffraction (SAED), Transmission Electron Microscopy (TEM), and UV/Vis Spectroscopy. A theoretical analysis was performed using Discrete Dipole Approximation (DDA) coupled with Large-scale Atomic/Molecular Massively Parallel Simulator (LAMMPS). LAMMPS was used solely to generate a representative model of the nanohut. The empty process was modeled using a nearest neighbor algorithm and showcased using Matlab and Visual Molecule Dynamics (VMD) software. Future work will be focused on integrating nanoshell technology into next-generation sensing devices.

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Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**

**The New Jack and Jill: Creating Identity From the Frames  
of the Civil Rights Movement**

**CiAuna Heard**

**Department of Sociology, College of Liberal Arts**

*[ciauna.heard@temple.edu](mailto:ciauna.heard@temple.edu)*

*Mentor: Matt Wray*

Organizations seeking to remain racially exclusive after the Civil Rights Movement were often subject to critique and forced to engage justification and legitimization tactics inspired by the language of the dominant social movement. This research asks: How do social movements influence the narratives and identities available to groups during times of social change?

Many black organizations engaged in private and public discourses about the material and symbolic utility of all-black groups. This study explores the discourse of one organization — Jack and Jill of America, Inc. — between 1967 and 1976. Despite enjoying rapid expansion since the club's inception, the 1960s signaled the beginning of a 20-year drop in membership growth. It was hypothesized that decreasing membership rates combined with the social climate of the Civil Rights Movement provided sufficient pressure to inspire a new internal discourse about Jack and Jill's purpose and identity. A content analysis of archival data suggests that Jack and Jill members employed the dominant narratives of the Civil Rights Movement and effectively negotiated its major frames. Further, the research found that the club was able to negotiate its interests in black morality, black politics, and black futurity as public issues in order to retain legitimacy and leverage its social influence. This project contributes to future research about the black upper class as social actors, research on social mobility and destigmatization strategies, and research about utilizing public frames in private identities.

This research was supported by the First Summers Research Initiative (FSRI) Award provided by the Temple University Graduate School.

Temple University  
Graduate Fellows Research Symposium

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**“*Non vi si pensa quanto sangue costa*”:  
Uncovering Vittoria Colonna’s Marian Devotion in  
Michelangelo’s Presentation Drawing**

Tiffany Lynn Hunt

Department of Art History, Center for the Arts/Tyler School of Art

*tiffany.hunt@temple.edu**Mentor: Marcia Hall*

Prominent scholarship on Michelangelo’s 1545 *Colonna Pietà* — a presentation drawing made for his close friend, Marchessa Vittoria Colonna — has interpreted the work as exemplifying both patron and artist reform theology, stemming from their association with the progressive ecclesiastical minds collectively identified as the *Spirituali*. Although undoubtedly both Vittoria Colonna and Michelangelo participated in the *Italian Evangelismo* movement, the tendency to read the *Colonna Pietà* as an iconographic treatise on *sola fide* has obscured the source of Colonna’s individual piety and its uniqueness from the dogma of dominant male *Spirituali* members.

This paper begins by deconstructing the formal characteristics of the *Colonna Pietà* to show the sophisticated iconographic contraction of Marian types amalgamated into a single figure. Next, a close examination of the fragmentary inclusion of cryptic text from Dante’s *Paradiso* reveals a key piece of evidence: the “cost of blood” points towards Marian-specific overtones. A meticulous reading of Colonna’s poetry corroborates her Marian devotion, and when paired with Michelangelo’s presentation drawing, demonstrates that the “cost of blood” borne by both mother and son resonates with Colonna’s markedly female spirituality and its role in incarnationist theology. This paper elucidates a nuanced characteristic that does not negate the dominant *Christocentric* interpretation; instead, it reveals the potential strategy for female agency through *Marian-centricity* in a male-dominated reform movement and Michelangelo’s potential mindfulness of his patron’s devotion.

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**September 21, 2013**

***A Gentleman's War***  
(17:30 minutes)

**Madeleine Hunt-Ehrlich**

**Department of Film and Media Arts,  
Center for the Arts/Division of Theater, Film and Media Arts**

*A Gentleman's War* examines how cricket binds a fraternity of men who keep the sport alive for their community in New York. This project was produced by the National Black Programming Consortium.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Relative Promiscuity Between Bacterial and Human FAD Synthetase****Kimberly Jacoby****Department of Chemistry, College of Science and Technology***kim.jacoby@temple.edu**Mentor: Robert Stanley*

FAD Synthetase (FADS) is a ubiquitous enzyme responsible for synthesizing flavin adenine dinucleotide (FAD) by the adenylation of flavin mononucleotide (FMN) using adenosine triphosphate (ATP). In bacteria, this enzyme is bifunctional, in that it catalyzes both the phosphorylation of riboflavin to produce FMN and the adenylation of FMN to produce FAD. In contrast, the eukaryotic FADS enzyme is monofunctional, being capable of only the adenylation of ATP to form FAD. Studies on bacterial FADS have shown considerable promiscuity in the acceptance of altered FMNs as substrates but absolutely no uptake of different nucleotide triphosphates (e.g., CTP, TTP, etc.).

The study shows that bacterial FADS (from *C. ammoniagenes*, CaFADS) will accept a modified ATP analog, specifically the fluorescent ATP analog aminopurine riboside-5'-triphosphate (2ApTP) for the production of dual fluorescent F-2Ap-D. Surprisingly, preliminary experiments show that monofunctional hFADS is not similarly promiscuous. These results indicate that this difference in substrate specificity may lead to unique biomarker applications. Understanding these enzymes may also lead to new approaches in nucleoside analog therapeutics.

This research was supported by the First Summers Research Initiative (FSRI) Award provided by the Temple University Graduate School.



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Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**

**Biofilm Ecology: The Hunger Games of the Microbial World**

**Megan Jennings**

**Department of Chemistry, College of Science and Technology**

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*Mentor: William Wuest*

Biofilms are organized and structured bacterial communities that account for approximately 99% of microbial life. Bacteria in the biofilm state typically carry higher virulence and resistance to antibiotics as opposed to their free-swimming (planktonic) counterpart, making them of great importance to the medical, industrial, and agricultural fields. In these bacterial communities, bacteria must fight with competitors in order to gain an advantage and survive; this is generally achieved by generating a chemical signal that is detected by neighboring bacteria. While a number of mechanisms for such competition have been determined, ranging from emission of nutrient scavengers to eviction of a neighboring bacteria population to apoptosis of an opponent, many more are waiting to be discovered.

This work focuses on the competitive interaction between *E. faecalis* and *S. aureus*. It has been found that *E. faecalis* biofilms inhibit the formation and growth of *S. aureus* biofilms under the conditions of fresh media flow. The aim is to elucidate the chemical underpinnings of this interaction and identify the biofilm modulating factor (BMF) responsible for this interaction. Current investigation is focused on the BMF's approximate size through spin filtration. In tandem, the BMF is isolated and purified through HPLC, and its structure identified through NMR, MS, IR, and X-ray crystallography. The methods developed herein can be applied to alternate bacterial and inter-kingdom systems, allowing for the discovery of novel BMFs and modes of competition among microbial life-forms.

This research was supported by the First Summers Research Initiative (FSRI) Award provided by the Temple University Graduate School.

Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**

***A Man Full of Trouble***  
(22:00 minutes)

**Michael Johnston**

**Department of Film and Media Arts,  
Center for the Arts/Division of Theater, Film and Media Arts**

*A Man Full of Trouble* is a dark comedy set in Philadelphia about a suicidal Alexander Hamilton re-enactor.

**Dissolution of Ti(IV) from TiO<sub>2</sub> by the Siderophore Desferrioxamine B**

**Kayleigh E. Jones and Ann M. Valentine**

**Department of Chemistry, College of Science and Technology**

*kayleigh.jones@temple.edu*

*Mentor: Ann Valentine*

Transition metals play an important role in many biological processes. Iron is essential for almost every organism, but its availability is limited due to low solubility of Fe(III) in aqueous environments. Microbial siderophores solubilize and sequester iron(III). Ti(IV) is chemically similar to Fe(III), and the use of usually inert TiO<sub>2</sub> is increasing in products such as sunscreens, paint, and joint replacements. In solution, siderophores like desferrioxamine B (DFOB) are avid binders of Ti(IV).

This research explores how DFOB can solubilize Ti(IV) from the surface of solid TiO<sub>2</sub>. Such dissolution might render bioactive Ti(IV) biologically available and might interfere with Fe(III) biogeochemical cycling. Suspensions of TiO<sub>2</sub> were exposed to DFOB, and monitored by UV/Vis spectroscopy to determine the binding and kinetics of Ti-DFOB formation. Complementary computational methods were employed to predict the structure of Ti-DFOB and compared to the crystal structure for Fe-DFOB. Competition between Fe(III) and Ti(IV) on mineral surfaces was investigated. Kinetic data confirmed that dissolution of Ti(IV) with DFOB is a two-step process, with one faster, less extensive step ( $k_{\text{max}} = 5.33 \text{ days}^{-1}$ ) and a slower step ( $k_{\text{max}} = 0.13 \text{ days}^{-1}$ ) involving additional Ti(IV). Two common forms of TiO<sub>2</sub>, anatase and rutile, responded differently to DFOB exposure. Competition of Fe(III) and Ti(IV) on the surface of a mixed oxide was confirmed, and concentrations and binding activity of each metal were quantitated. Understanding these interactions is necessary to determine the effects of binding, the interaction of these complexes in aqueous environments, and how they behave chemically in biological systems.

Funding was made possible by the Temple University Department of Chemistry and a First Summers Research Initiative (FSRI) Award from the Temple University Graduate School.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Compressive Mechanics of a Poly(Vinyl Alcohol)-Based Hydrogel  
System for the Replacement of the Knee Meniscus****Line Francine Kouecheu****Department of Mechanical Engineering, College of Engineering***line.francine.kouecheu@temple.edu**Mentor: Anthony Lowman*

**Objective:** The goal is to develop a functional implant designed in the image of the native meniscus as an alternative to meniscectomy and sutures.

**Hypothesis:** Hydrogels made of poly (vinyl alcohol) (PVA) and poly (vinyl pyrrolidone) (PVP) can be tuned to have mechanical properties similar to those of the meniscus.

**Methods:** Equilibrium swelling in a medium replicating the ionic and osmotic content of the synovial fluid was investigated over 35 days. The mass retention was characterized as a function of the cross-link density and the polymer content. The modulus of hydrogels was obtained in unconfined compression at 100%/min and at the physiological strain rate of walking.

**Results:** Swelling ratios for most formulations show no significant difference by day 14 of immersion. Percentage polymer mass retention increases with the cross-link density only. 15% wt is the only formulation whose compressive modulus falls within the targeted range at 100%/min. It is not reasonable at this time to choose a single formulation from results obtained at the physiological strain rate due to highly varying modulus of a human meniscus as a result of its intrinsic anisotropy.

**Discussion:** At 100%/min, 15% wt hydrogel mimics the meniscus best. At the physiological strain rate, all formulations would work based on current data from real human meniscus.

**Conclusion:** A matching hydrogel formulation has been identified at 100%/min. Hydrogels and real human menisci need to be tested at the physiological strain rate following an identical protocol to obtain more conclusive data.

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Temple University  
Graduate Fellows Research Symposium

**September 21, 2013**

**Poetics of Idiosyncratic Embodiments in Modernity**

**Marija Krtolica**

**Department of Dance, Center for the Arts/Boyer College of Music and Dance**

*[marija.krtolica@temple.edu](mailto:marija.krtolica@temple.edu)*

*Mentor: Karen Bond*

This presentation explores poetic transgressions and ways in which the language of movement alters spatial and temporal organization. By looking into the movement outside common sense of a specific social frame and the bodily responses to the choreography of religious institutions, mental hospitals, and theatres, the presentation engages the ambiguities of Modernity. Proposed are the questions about direction, rhythm, and expression of an individual response to the physical and psychic boundaries of the spaces characterized by imposed rules and common rituals.

The significance of the research to be conducted is that it unravels the construction of pathology within Modernity in rapport to the critically staged grotesques. The hypothesis that instigates this scholarly and phenomenological inquiry proposes that individual abnormality cannot be examined outside its socio-historical context, and an interpretative grid within which it takes became legible. Research methods include archival investigation of medical inscriptions, visual documents, and artistic artifacts displaying physical and psychic idiosyncrasies. The goal of the research is to bring critical awareness to historically determined evasions of normative embodiments through spontaneous and choreographed behaviors. Questions that arise and need to be investigated include the relationship between solitary confinement and impressions of the subjects who suffer from pathology, as well as ways in which new technologies influence organization of bodies, space, and time. Based on the previous research, the presentation affirms critical and educational potentials of the theatrical embodiment of transgressions from the norm. The main direction for future research is epistemological: logic of a particular event, and manners in which interpretations surround and determine its meanings.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Investigating the Mechanisms of Injury in Traumatic Aortic Rupture****Kaveh Laksari, Ali Hemmasizadeh, Mobin Rastgar Agah,  
and Soroush Assari****Department of Mechanical Engineering, College of Engineering***kaveh.laksari@temple.edu**Mentor: Kurosh Darvish*

Traumatic aortic rupture is a significant cause of death in motor vehicle accidents with aortic injuries leading to 20% fatality in motor vehicle crashes. The knowledge of the material properties of aortic wall is fundamental to the understanding of aorta rupture mechanisms and how a local tear propagates through the aortic wall. It is believed that non-fatal injuries may also lead to long-term cardiovascular disorders in many accident survivors, even with no significant structural damage at the time of accident. The aim of this study was to characterize the change in mechanical properties along the porcine thoracic aorta wall undergoing a mild blunt trauma.

Whole porcine descending thoracic aortas were installed in a novel experimental model of dynamics bending of aortic tissue to simulate the high-rate and large deformation of the aorta. The setup, including the tissue and an indenter, was mounted on a linear acceleration impact system with high repeatability and decelerated at peak values of 55G. The pressure inside the aorta was measured using a high-frequency piezoelectric pressure at the end of the proximal fitting. The deformation of the aortic samples was measured by tracking the photo targets using a high-speed camera at 2,200 fps. Significant W-shaped deformations were observed in the specimens upon impact in these experiments.

Histology images were acquired using a microscope. These images clearly showed that in the impacted specimens, there was a clear disruption of the elastic lamellae as regions of separation and delamination between these layers were detected. These regions were detected by image processing. The results of this study indicate that even if impact on the aortic tissue does not result in total rupture, it can undermine the tissue integrity and reduce its failure threshold.

**Microfluidic Device and Assay for Mimicking the  
Leukocyte-Endothelium Interactions *In Vivo***

**Giuseppina Lamberti**

**Department of Mechanical Engineering, College of Engineering**

***g.lamberti@temple.edu***

***Mentor: Mohammad Kiani***

**Objective:** Due to the significance of the leukocyte-endothelium interactions, several *in vitro* models have been developed to study different aspects of the leukocyte adhesion cascade. However, no single *in vitro* model can study the entire leukocyte adhesion cascade consisting of rolling, adhesion, and migration at the same time. In this study, we present a novel microfluidic device that enables a single assay to study the entire cascade.

**Materials and Methods:** Based on *in vivo* microvascular networks, a microfluidic device (MFD) on PDMS consisting of a vascular and a tissue compartment connected by  $3\mu\text{m}$  gaps was assembled. The device was seeded with endothelial cells (HUVECs) in the vascular channels and activated with TNF- $\alpha$  for four hours before the experiments.

**Results and Discussion:** Our findings indicate that leukocytes preferentially adhere within 1–2 diameters from the bifurcations. Furthermore, leukocytes adhesion was found to be minimal in high shear regions (shear rate  $>300\text{ s}^{-1}$ ) and maximal in low shear regions, indicating that fluidic shear strongly influences cell adhesion in the MFD. Leukocyte migration from vascular channels to tissue compartment was also monitored as a function of time in the area of highest adhesion of leukocytes, showing an exponential growth during two hours of observation time.

**Conclusions:** An MFD based on the images from an *in vivo* microvascular network for characterizing the steps of leukocyte adhesion during inflammation has been successfully developed and validated. Future studies involve use of therapeutics to block leukocyte-endothelial interactions and monitoring of subsequent rolling, adhesion, and migration.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Synthesis and Evaluation of Harmine Analogs as Enhancers  
of Glutamate Uptake****Nicole Lounsbury<sup>1</sup>, Rong Fan<sup>1</sup>, Benjamin E. Blass<sup>1</sup>, Wayne E. Childers<sup>1</sup>,  
Magid Abou-Gharbia<sup>1</sup>, and Rita Sattler<sup>2</sup>****<sup>1</sup>Department of Pharmaceutical Sciences, School of Pharmacy, Temple University;  
and <sup>2</sup>Department of Neurology and Brain Science Institute, Johns Hopkins University*****tud51712@temple.edu******Mentor: Wayne Childers***

Enhancement of glutamate uptake through the primary astrocytic glutamate transporter GLT-1 (EAAT2) may provide therapeutic benefit for a number of glutamate-associated disorders, including amyotrophic lateral sclerosis (ALS) and reinstatement of addiction to psychostimulants such as cocaine. A previously reported screen of 1,040 known drugs by the Rothstein group identified harmine, a naturally occurring beta carboline alkaloid, as an enhancer of GLT-1 activity that displays anti-addictive and neuroprotective effects *in vivo*. However, harmine's relatively low potency and its non-selective inhibitory activity against monoamine oxidases may limit its clinical usefulness.

A number of harmine analogs were designed, prepared, and evaluated for their GLT-1 enhancing effects in an astrocyte/neuron coculture cellular assay. While the structure activity relationship of the active pharmacophore of harmine for GLT-1 enhancement appears to be narrow, cross-screening of our analogs through the Psychoactive Drug Screening Program at the University of North Carolina has identified compounds with substantial 5-HT<sub>1E</sub> and 5HT-2B activity. These results have paved the way to an entirely new drug discovery project.



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**Involvement of IRS-1 and p38S<sub>J</sub> Protein in the  
Regulation of Neurite Extension**

**Jernelle Miller**

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*Mentors: Shohreh Amini and  
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The insulin-like growth factor-1 (IGF-1) signaling pathway plays an important role in neuronal cell differentiation. Recent studies have shown that IGF-1 has the capacity to counteract the retraction of neuronal processes in response to proinflammatory cytokines such as TNF- $\alpha$ , which is a known factor for neuronal injury in the CNS in a variety of pathological conditions, including HIV encephalitis (HIVE). This neuroprotection is thought to be mediated via interference of TNF- $\alpha$ -induced interaction of beta-1-integrin with insulin receptor substrate-1 (IRS-1).

This study demonstrates the interaction of IRS-1 with the disintegrin and metalloproteinase ADAM10 through the N-terminal domain of IRS-1 and shows that cooperation of these proteins is involved in the regulation of neurite extension and retraction by IGF-1 and TNF- $\alpha$ , respectively. Also studied was the role of p38S<sub>J</sub>/DING plant phosphatase in neuronal differentiation. It was shown previously that p38S<sub>J</sub>/DING has been implemented in the neuroprotection against HIV-1 and ethanol-induced toxicity. The current study analyzed the role of IRS-1 and p38S<sub>J</sub>/DING in the stability of neuronal processes and signaling pathways. PC12 cells expressing the N-terminal domain of IRS-1 show enhanced neurite extension after IGF-1 treatment and reduced neurite depletion relative to control cells after TNF- $\alpha$  treatment. The data also suggest that p38S<sub>J</sub>/DING is involved in molecular signaling pathways, which regulate structural rearrangements in neuronal processes. The presence of p38S<sub>J</sub>/DING protein increased neuronal survival and stability of neuronal processes, and reversed toxic effects of TNF- $\alpha$  in IRS-1 expressing cells. Presented observations suggest a role for ADAM10 in the mechanism for IGF1/IRS-1 signaling pathway in sustaining the stability of neuronal processes. The results also suggest a new mechanism for p38S<sub>J</sub>/DING and IRS-1 signaling to sustain stability in neuronal processes.

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**Photophysical Properties of Pyrrolocytosine, a Fluorescent  
Base Analog of Cytosine****Quynh Nguyen****Department of Chemistry, College of Science and Technology and  
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The discovery of various fluorescent probes has introduced a variety of useful techniques to investigate biological processes. In fluorescence studies, developing more efficient fluorescent probes is an important objective. Therefore, this research focuses on pyrrolocytosine (PC), a fluorescent analog of cytosine, which is used to probe nucleic acid dynamics. This analog is structurally similar to cytosine, and its fluorescence is sensitive to the local environment of the base. Unlike cytosine and other natural nucleobases, PC possesses a relatively high fluorescence quantum yield. The fluorescence of PC is decreased when it is incorporated into a dinucleotide or a trinucleotide containing the natural nucleobase, guanine, and the mechanism is not well known.

This study investigated the photophysical properties for complexes where PC is placed at either the 3' or 5' terminus as it would be in B-form DNA, and PC is hydrogen-bonded to guanine. The configuration interaction singles method was used to determine the origin of this decrease in the fluorescence quantum yield of PC. Calculations showed that the oscillator strength, a dimensionless quantity that describes the brightness of a state, for the transition from the lowest  $\pi$ - $\pi^*$  back to the ground state of PC decreased about 20% in base stacking complexes. However, only slight changes in oscillator strength were observed when PC was hydrogen-bonded to guanine, having no significant effect on the fluorescence quantum yield. Since the oscillator strength of an excited state is directly related to the fluorescence quantum yield, the quantum yields of the base stacking complexes are expected to decrease.

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**The Effects of Sterilization on Silver Halide  
Infrared Fiber Optic Probe Tips**

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*Mentor: Nancy Pleshko*

Osteoarthritis (OA) is a degenerative joint disease that involves the loss of articular cartilage. Arthroscopic evaluation of the molecular components of cartilage would allow for earlier and more accurate diagnosis of OA. FTIR spectroscopy can characterize biomolecular components and may be used arthroscopically with a silver halide fiber optic sampling arrangement.

An important first step is to assess the effect of sterilization on the optical integrity of silver halide probes. Two forms of sterilization are used at Temple University hospital: Sterrad<sup>®</sup> and autoclave. The Sterrad<sup>®</sup> procedure exposes materials to hydrogen peroxide vapor and low-temperature gas plasma; autoclaving exposes materials to a temperature of 132°C for four minutes. Fifteen probes were divided equally among the three treatments: Sterrad<sup>®</sup>, autoclave, and no sterilization (control). All probes were used to collect FTIR spectra from 95% ethanol, bovine articular cartilage, bovine patellar tendon, and a spectroscopic standard, prior to treatment and between each of the three treatment cycles. The probes were visually altered after the first sterilization cycle: one of the Sterrad<sup>®</sup> treated probes had blackened edges, and the autoclaved probes all became cloudy. However, no significant changes in spectral intensities obtained from the samples were observed with either sterilization method. The results show that despite visible changes in the material (presumably linked to a chemical change), the optical integrity of silver halide FTIR probes is maintained after sterilization.

This research was supported by the First Summers Research Initiative (FSRI) Award provided by the Temple University Graduate School.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Macrocycle Ligand Synthesis for Catalytic CO Reduction****Garvin Peters<sup>1</sup>, Jacob Winegrad<sup>2</sup>, and Michael Zdilla<sup>2</sup>****<sup>1</sup> Department of Chemistry, College of Science and Technology and  
Temple University Minority Access to Research Careers – Undergraduate Student  
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The conversion of organic carbon oxides (CO<sub>2</sub>, CO) into small organic molecules provides the opportunity to form value-added organic compounds from a molecule that is relatively useless in terms of direct function. Current industrial techniques used to convert carbon monoxide into useful chemicals (plasticizers and detergents to synthetic fuels and lubrication oils) involve the consumption of a fossil-carbon source. For the development of environmentally friendly, renewable chemistry, new catalytic technologies are needed to convert inorganic waste carbon into useful molecules without the reliance on fossil fuels. Thus, the development of catalysts capable of converting carbon monoxide (as the sole carbon source) into organics is the ultimate goal. Pathways have been proposed toward this goal, which begins with preparation of metal-organic catalysts designed by the group. The organic component of the proposed catalyst (called the ligand) is designed to provide structural and reactive specificity. These ligands are to be prepared from pyrrole dialdehyde through Schiff base condensation with specifically designed diamines, resulting in the formation of a “tether” linked pyrrole-imino-aldehyde ligand. A second condensation produces the desired tethered di-imine ligands to bind two atoms of the target metal, cobalt. Dialdehyde synthesis has been achieved, leaving only the Schiff base condensation for the formation of the macrocycle. The synthetic progress thus far and future plans will be discussed.

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**Asymmetric Multiprocessing on the Zynq-7000 EPP's Dual  
ARM-A9 MPCore Processor**

**Andrew Powell**

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***Mentor: Dennis Silage***

To help embedded system engineers meet the demanding performance requirements for applications such as wireless communications, digital signal processing, medical imaging, and other embedded-related applications, Xilinx has developed a new series of integrated circuits that comprise of a Field Programmable Gate Array (FPGA) and a processor, the Zynq-7000 Extensible Processing Platform (EPP). The Zynq-7000 EPP is a microprocessor-centric "all programmable" system-on-chip device that features, but is not limited to, a Dual ARM Cortex-A9 processor, the FPGA, many peripheral interfaces from UART to GPIO, main memory controllers, and an SoC bus architecture designed according to the Advance Microcontroller Bus (AMBA) 3 Advance eXtensible Interface (AXI) specifications.

In past projects done under the System Chip Design Laboratory (SCDL) for the Zynq-7000 EPP, one graduate student managed to first download the Bare Metal Operating System (OS) onto the ZedBoard and develop software to run over the Bare Metal OS. He also completed a similar task under a Linux kernel downloaded onto the ZedBoard. A recent master's recipient, also from SCDL, was able to implement RheaStone benchmarks for the Zynq-7000 EPP ZX702 evaluation kit executing the Free Real Time OS (RTOS). These efforts help embedded system designers to know how to perform certain functions and to learn what the certain limitations and timing constraints are in regards to the Zynq-7000 EPP. This research proposes to further develop that knowledge by programming the Zynq's Dual-core ARM-A9 processor to run in asymmetric multiprocessing mode with FreeRTOS as the OS for both cores, using Xilinx's Vivado Design Suite.

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***Man of the Monkey***  
(Trailer — 5:30 minutes)

**David Romberg**

**Department of Film and Media Arts,  
Center for the Arts/Division of Theater, Film and Media Arts**

Intrigued by the tale of a scary man living in isolation with his chimpanzee wife, David Romberg travels to his childhood home on Ilha Grande, Brazil, to find him, only to discover that the tale pales in comparison to what he uncovers. *Man of the Monkey* was recently awarded the Tribeca Film Institute Latin American Media Arts Fund and The Princess Grace Award.

**Molecular Characterization of Embryonic Stem Cells Integrin-Mediated Adhesion to Extracellular Matrix Proteins Secreted by A549 Lung Adeno-Carcinoma Cells**

**Alexis L. Rylander**

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*Mentor: Peter Lelkes*

**Introduction:** Cells growing in culture secrete a complex mixture of compounds consisting of non-proteinaceous small molecules and proteins such as growth factors, soluble receptors, and extracellular matrix (ECM) components. Integrins control the attachment of the stem cells to certain proteins in culture, which is an early step in directing the cells toward lung differentiation. The present research aims to characterize the integrin attachment profile by using embryonic stem cells (ESCs) and their attachment ability to the ECM protein secreted by A549 lung adeno-carcinoma cells.

**Goals:** The long-term goal is to develop regenerative medicine approaches for generating functional lung tissue using stem cells in order to treat diseases such as pulmonary fibrosis, emphysema, and chronic obstructive pulmonary disease.

**Methods:** To study the adhesion of ESCs, a large amount of A549-derived conditioned media (CM) was generated. For the adhesion assay, the CM and other tested compounds were immobilized on high protein binding ELISA plates followed by blocking with 1% BSA. Thereafter, the ESCs were fluorescently labeled and applied to the wells for one hour to allow attachment. At the end of the incubation period, the cells were solubilized, and the number of attached cells was quantified using fluorescence reading. Another series of experiments examined the spreading of the cells during two hours' incubation on immobilized tested compounds. Thereafter, microphotographs were taken, and the number of attached and spread cells was quantified.

**Results:** It was found that the ESCs were able to attach to immobilized collagen type 1, fibronectin and laminin, but did not show attachment to collagen type 4. These results suggest that the ESCs express alpha2, alpha5, and alpha3, but do not express alpha1 and alpha 4 integrin receptors. Upon immobilization of A549 CM, a dose dependent attachment, which was partially inhibited by pretreating the ESCs with different integrin-specific antagonist (disintegrins) extracted from snake venom, was measured. The attachment of ESCs to immobilized A549 CM was followed by partial spreading of the cells, which was significantly different compared to immobilized collagen type1, fibronectin or laminin.

**Future Plans:** In the future, the molecular composition of the CM using chromatographic separation and mass-spectroscopy techniques will be further characterized in detail.

**Temple University  
Graduate Fellows Research Symposium****September 21, 2013****Small-Molecule Modulation of ABCC10 to Enhance  
Cancer Chemotherapy****Christiana Teijaro****Department of Chemistry, College of Science and Technology***christiana.teijaro@temple.edu**Mentor: Rodrigo Andrade*

Efflux pumps, particularly those belonging to the ATP-Binding Cassette (ABC) transporters, play an important role in multidrug resistance. One transporter, ABCC10, has recently emerged as a promising target for cancer chemotherapy. ABCC10 is expressed in numerous cancers such as breast, ovarian, and lung. It has been shown that overexpression of ABCC10 is correlated with taxane and vinca alkaloid resistance.

The purpose of this research project is to synthesize small molecule probes and inhibitors of the efflux pump ABCC10. It has been shown that alstolucines B and F selectively inhibit ABCC10. Small molecule probes of alstolucines B and F will be synthesized and used to determine the binding of the small molecule to ABCC10. This will allow for further analoging of alstolucines B and F to increase potency and selectivity of the small molecule inhibitors.



**What Makes Us Different: Nonsynonymous and Synonymous  
Variation Among Human Populations**

**Vincent Tu<sup>1</sup>, Meganathan Poorlin Ramakodi<sup>2</sup>, and Rob J. Kulathinal<sup>2</sup>**

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*Mentors: Rob Kulathinal  
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Genetic variation in protein-coding regions of the human genome is responsible for many of the phenotypic differences between populations, including disease predisposition. Therefore, identifying the genetic variants among different geographical populations and the amino acid changes that can occur may help us understand the innate risk that a certain population harbors for a particular disease.

In this project, several genomic databases were mined to generate a list of amino acid differences between 1,092 human individuals from the 1000 Genomes Project. Data from the Consensus CDS annotation project were interrogated for transcript frequencies, transcript lengths, and the starts and ends of each transcript exon. These validated CCDS data were mapped onto the hg19 human genome assembly to create a reference for vertical alignment of the human coding region with associated in-frame codons and corresponding amino acids. A database of human disease variants (Online Mendelian Inheritance in Man) was synchronized with the human reference vertical alignment to create a database of nonsynonymous and synonymous mutations across human populations. The frequency of amino acid change is then estimated across populations using the 1000 Genomes Project. This evolutionary medical dataset will be used to understand the evolution of disease in different populations due to differences in the underlying genetic variation in protein-coding regions.

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**Optimization of Holomycin Synthesis****Jay Veras****Department of Chemistry, College of Science and Technology and  
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Training for Academic Research (TU-MARC U\*STAR) Program***tuc01087@temple.edu**Mentor: Jacqueline Tanaka*

Clinical advancement of many therapeutically active natural products is hindered by such drawbacks as poor selectivity or metabolic stability. Synthetic alterations of such molecules can result in a desired change of such properties. Holomycin is a natural product classified as a dithiopyrrolone. These molecules are active against drug-resistant strains of bacteria that cause gonorrhea, chlamydia, and infections caused by *Staphylococcus aureus*. The optimization of holomycin synthesis will serve to facilitate its production for further testing and the production of analogues that may be clinically useful.

In this work, the steps already described in literature for the synthesis of holomycin are systematically adjusted to provide greater yield, reaction rates, and purity. Changes were made in the reagents selected; addition rates; separation methods; catalysts; purification methods; and the times of stirring, heating, and refluxing. Products were characterized by <sup>1</sup>H NMR, <sup>13</sup>C NMR, electrospray mass spectrometry, and UV/Vis spectrophotometry. The overall synthesis is completed in seven steps. Throughout the reaction, four stable intermediates are purified prior to their subsequent reaction. In the final step, most of the product is lost in purification due to low solubility of holomycin, resulting in a yield of 16%. The intermediate after the sixth step of the synthesis can be used to conveniently make holomycin derivatives. Hence, optimization of this synthesis results in facilitation of producing analogues more suitable for clinical development. The holomycin produced in this work will be used in future experiments to determine which portions of holomycin are pharmacophores.

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**National Board Certification as Music Teacher  
Professional Development**

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*Mentor: Alison Reynolds*

Although initial studies exist on secondary choral teachers' experiences and preparation for National Board for Professional Teaching Standards (NBPTS) music certification in general terms, little information focuses on elementary general music teachers' perceptions of the process. The purpose of this research is to explore the process of becoming National Board Certified in Music: Early and Middle Childhood. For this study, the overarching question has two facets: In what ways do music teachers who completed National Board Certification in Music: Early and Middle Childhood perceive certification (a) as having influenced their teaching, and (b) as meaningful professional development compared with other forms of professional development in which National Board Certified teachers have participated? A qualitative, narrative design was used to explore the perceptions of teachers regarding this certification. Data sources for this study are artifacts from NBPTS and interviews with subjects who have successfully completed NBPTS certification in Music: Early and Middle Childhood. Using narrative approaches to analyze data, emerging stories that explore the certification process from the perspectives of elementary general music teachers are shared, focusing on ways the process may or may not serve experienced music teachers. Emergent themes include the need for support, such as mentors and feedback, during the certification process; the role of financial incentives in recruiting and retaining applicants; and the challenges and benefits of the certification process for successful candidates.

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