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## **DEVON BRENNER: CHANGING THE LITERACY CONVERSATION AT THE NATIONAL LEVEL**

#### By Judith Stoddart, PhD, Interim Dean, Graduate School

<u>http://grad.msu.edu</u>

When she was selected to be part of the first cohort of University Distinguished Fellows in 1994, Devon Brenner was an elementary and middle school teacher committed to creating a new model for language arts education. But she guickly realized that literacy education was more than a one-on-one transaction in the classroom: cultural and social factors and state and federal policy decisions created both opportunities and constraints over which she had little individual control. Pursuing her doctorate was a chance to analyze those broader contexts and hopefully to make an impact on a larger scale. Twenty years later, Devon has become a leading researcher in literacy education and chair of an academic department that focuses on teacher preparation as well as research. And this year she has taken her expertise to Capitol Hill, providing her perspective on some of the major pieces of legislation that will impact the future of K-12 and higher education.

"I've always been interested in research that makes a contribution," Devon explained in a recent interview. "I've always worked in my state on teacher preparation and policy; I'm very committed to not just being in the ivory tower but being involved in how policies play out in practice." Devon is learning about that process as an education policy fellow for U.S. Senator Thad Cochran, chair of the Senate Appropriations Committee. She is bringing her knowledge of education research to bear on discussions surrounding the Higher Education Act and the Elementary and Secondary Education Act, including thinking about how that research might help to shape the new Every Student Succeeds Act.

Devon's special expertise is in the area of rural education, which is often lost in the focus on failing large urban school districts. One in five children is educated in a rural school district, and half of all U.S. school districts are rural. Devon's research focuses both on methods of literacy instruction for these students and on teacher preparation and training to meet rural needs. As a professor at Mississippi State University, Devon has been co-principal investigator for a U.S. Department of Education grant, which focuses on establishing alternate routes for training teachers in rural areas. Unlike programs such as Teach for America, which bring outside educators into schools for a short-term commitment, the grant-funded Teacher Education for Rural Middle Schools (TERMS) program taps people with roots in the community who are currently in other careers. "Growing your own teachers," according to Devon, makes it possible to better connect students' education with their local experiences, and the research backs her up: the students of TERMS teachers have the same outcomes as students in classrooms headed by teachers who were prepared through a more traditional undergraduate teacher preparation program.

Devon said her experience in Washington will shape the way that she thinks about her research when she returns. Lobbying groups and large organizations are often the ones making claims for what works in education, but faculty also need to make sure they are actively involved in national conversations. "Faculty need to create the relationships that get them to the table," she urged, whether through internships or through regular commu-



**ABOVE:** *MSU and University Distinguished Fellow alumna Devon Brenner stands in front of the seal of the State of Mississippi.* PHOTO CREDIT: DEVON BRENNER

nication with legislators in their home states.

Devon stressed that her education in the Michigan State University Curriculum, Teaching, and Educational Policy doctoral program prepared her to hit the ground running when she arrived at Mississippi State. "That land-grant mission colors everything that happens at both institutions; it's so focused on practice and policy and students," Devon commented. "There is a common dedication to improving the lives of the students in the states where we are."

And the University Distinguished Fellowship made it possible for her to finish her degree quickly, and debt free, and to focus her energy on the practical applications of her research when she took her faculty position. "Graduate education," at a place like MSU, Devon emphasized "is where lives are really transformed: you learn to think and to reason, and to make a difference." When you provide support for future scholars and educators, "the impact is exponential. You have the opportunity to change the lives of many down the line."

#### FOR MORE INFORMATION:

- University Distinguished Fellowship Program: grad.msu.edu/universityfellowships
- College of Education Department of Teacher Education: <u>education.msu.edu/te</u>
- Support fellowships at Michigan State University: supportforstudents.msu.edu/graduate

## INTERNATIONAL LITERARY ASSOCIATION HONORS UNIVERSITY ENRICHMENT FELLOW



Graduate student Jon Wargo has been named to the inaugural edition of the International Literacy Association's 30 Under 30 list. According to the publication, the list is comprised of "up-andcoming trailblazers [who] are changing the landscape of literacy and education." Jon is a PhD candidate in the Curriculum, Instruction, and Teacher Education program in MSU's College of Education, and is a

University Enrichment Fellowship recipient.

In 2015 Jon also received the Conference on College Composition and Communication Gloria Anzaldúa Rhetorician Award for his research exploring language and literacy practices of the LGBTQ community in Michigan.

"My work with LGBT and queer youth is motivated by those young people who, like me, worked together to design a more just and possible future for themselves and their communities," says Jon.

To view an interview with Jon from early in his graduate studies career, please visit the Graduate School's Featured Fellows website, <u>fellows.msu.edu/research/jon-wargo</u>.

University Enrichment Fellowships and University Distinguished Fellowships enable the Graduate School to provide financial support for outstanding students in doctoral or master of fine arts programs. Increasing the availability of these fellowships is a priority for the Graduate School during the <u>Empower Extraordinary</u> campaign. To learn more, please visit <u>supportforstudents.msu.</u> <u>edu/graduate</u>.

## MOOCS AND MOOC-CENTERED LEARNING COMMUNITIES: WHAT ARE THEY AND HOW CAN THEY HELP REFORM STEM EDUCATION?

By Henry (Rique) Campa III, PhD, Associate Dean, Graduate Schoo

For the last decade, the Center for the Integration of Research, Teaching, and Learning (or CIRTL - see sidebar on page four) has focused attention on preparing future faculty in science, technology, engineering, and math (STEM) to be both excellent teachers and researchers. As one of the three founding institutions of the CIRTL Network, MSU is leading the way in reforming STEM education, not only through programs on our campus, but through making what we know about effective teaching available to doctoral students and postdocs worldwide.

### **EXPANDING CIRTL'S REACH THROUGH MOOCS**

While the impact of the current 21-institution CIRTL Network is substantial, there are far more STEM future faculty who do not yet have access to significant professional development opportunities in teaching and learning. As a result of this need, a team across the CIRTL Network is leading an NSF-funded effort to develop Massively Open Online Courses (MOOCs) with highly interactive online learning modes that prepare participants to implement and advance evidence-based, high impact teaching practices. These MOOCs also leverage what we know about the effectiveness of learning communities: participants are encouraged to create peer groups across continents through the course platform as well as local communities closer to home.

In October 2014 the CIRTL MOOC Team launched their first sevenweek MOOC, *An Introduction to Evidence-Based Undergraduate STEM Teaching*, offered for a second time in fall 2015. This course is designed to introduce graduate students and postdocs to foundational evidence-based practices in undergraduate STEM teaching and learning. Modules delivered through the Coursera platform include: Principles of Learning; Learning Objectives;



**ABOVE:** Henry (Rique) Campa III, PhD, films a video segment for the CIRTL MOOC. PHOTO CREDIT: KATHERINE KELLY, MSU GRADUATE SCHOOL

Assessment of Learning; Active Learning; Inclusive Teaching; and Lesson Planning. Participants learn about effective teaching strategies and the research that supports them, and they have an opportunity to apply what they learn to design lessons and assignments they can use in future teaching opportunities. For the first offering of this MOOC, over 4,000 people were active in the course; 566 received certificates for completing all modules and activities. Participants included doctoral students, postdocs, faculty, and instructional staff; 25% were located outside the U.S. (See "MOOCS, CONTINUED" ON PAGE 4)

## MOOCS, CONTINUED.

## **MOOC-CENTERED LEARNING COMMUNITIES**

In addition to offering the CIRTL MOOCs to any individual interested in becoming a more effective post-secondary STEM educator, the CIRTL MOOC Team encourages participants to form MOOC-Centered Learning Communities (MCLCs). In MCLCs graduate students and postdocs commit to participating in the MOOC together and to attending facilitated face-to-face meetings. Local communities share their discussions and activities with the global MOOC communities were created at universities in the U.S., United Kingdom, Germany, Brazil, Trinidad, Columbia, Argentina, and Honduras. To learn more about MCLCs visit: <u>stemteachingcourse.org/mooc-centered-learning-communities-mclc</u>.

The MOOCs also are being constructed as distinct e-learning modules to be published as open courseware for adoption into existing or new training programs. Instructional materials have been prepared into a CIRTL MOOC Facilitator's Guide for each course module. The guide includes suggestions for inperson activities, sample discussion questions, and ways to connect with other facilitators to exchange ideas about running local groups. The guides can be used by those with little prior experience in STEM pedagogy, but they also include deeper engagement activities for facilitators and groups comfortable with reflective practice, trialing of student learning assessments, or implementing active-learning. For details on obtaining a facilitator's guide, visit: stemteachingcourse.org/mooc-centered-learning-communities-mclc/mclc-facilitators.)

#### **MEASURING SUCCESS**

During the first offering of the introductory MOOC, 48 facilitators developed MCLCs across the world, and two-thirds responded to a post-course survey, characterizing their in-person participants, activities, use of resources, and learning outcomes. MCLCs were facilitated by STEM faculty and teaching staff, and some were even self-facilitated by a senior graduate student or postdoc. Almost half of the MCLCs were formed at institutions outside the CIRTL Network, an exciting outcome portending spontaneous growth and national need. Two-thirds of the MCLCs were interdisciplinary. Ninety percent of the learning communities facilitators indicated they would do it again and recommend it to a colleague.

Perhaps the most compelling aspect of the MCLCs has been the remarkable value the participants associated with the opportunity to interact with fellow students. Many stated how much they enjoyed sharing experiences in a new community, how they valued the extra accountability associated with an in-person learning community, and the deep discussions about teaching and learning initiated in the MOOC.

#### LOOKING TO THE FUTURE

Improving our nation's competitiveness rests, in part, with graduating larger numbers of STEM undergraduates with better professional skills to succeed in our ever-changing economy and society. Improving our colleges' and universities' undergraduate STEM education means confronting a major strategic gap and significant need: effective preparation of future faculty in teaching and learning. When the newest CIRTL MOOC, *Advancing Learning through Evidence-Based STEM Teaching*, goes live in spring 2016, we will continue to explore how connecting global and local learning communities can play an innovative role in transforming STEM education.

The MOOC development team includes: H. Campa III, PhD, PI, Michigan State University; D. Bruff, PhD, Co-PI, Vanderbilt University; B. Goldberg, PhD, Co-PI, Boston University; and K. Barnicle, PhD, Co-PI, and R. Mathieu, PhD, Co-PI, University of Wisconsin-Madison. For more information on the project, MOOC course content, access to course video modules, and how to register visit: <u>stemteachingcourse.org</u>.

## WHAT IS CIRTL?

The Center for the Integration of Research, Teaching, and Learning or CIRTL (cirtl.net) is a network of 21 universities across the United States advancing STEM undergraduate education by helping prepare future STEM faculty in the use and assessment of evidence-based instruction. The strategy used by the CIRTL Network is driven by the fact that nearly 80% of all future STEM faculty in the United States come from only 100 research universities. Reaching graduate students and postdocs at CIRTL institutions can have a transformative effect on the future practice of STEM teaching and learning everywhere they secure academic positions. Building on three core ideas - teaching-as-research, learning communities, and learning-through-diversity - the CIRTL Network community has developed, implemented, and evaluated institution-wide programs that demonstrably prepare future faculty to use evidence-based, high-impact teaching. A decade of CIRTL research, funded by the National Science Foundation, has demonstrated that early-career faculty prepared in learning communities based on the core ideas use research-proven instruction in their classrooms, value the diversity of ideas and experiences among students and instructors, and quickly develop their disciplinary research programs and publish. As a result of the collective effort across the network, hundreds of future STEM faculty per year are now stepping into classrooms equipped with teaching tools thanks to CIRTL opportunities offered on local campuses and virtually through CIRTL. During fall 2015 applications were solicited from universities across the United States to join the CIRTL Network. The intent is to expand the network to 50-60 institutions to increase the capacity for preparing future faculty to use evidence-based teaching practices to help reform STEM education in the future.

## **MSU BEST: MAKING BIOMEDICAL CAREERS BETTER FOR MSU PHD STUDENTS AND POSTDOCS**

#### By Stephanie Watts, PhD, Assistant Dean, Graduate School

For nearly two decades the Graduate School at Michigan State University (MSU) has offered programs to support graduate students and postdoctoral fellows for academic and career success. In 2014 MSU was awarded one of 17 BEST (Broadening Experiences in Scientific Training) grants from the National Institutes of Health (NIH) to build a new program, this one targeted at biomedical PhD students and post docs.

MSU and NIH have long realized that the majority — around 70% — of biomedical graduate students and postdoctoral fellows ultimately pursue careers outside academia. By awarding MSU with one of these highly competitive grants, NIH recognized the existing resources available at the MSU Graduate School and realized we could do even more to support career development among biomedical scientists.

#### WHAT WE CAN DO FOR TRAINEES

MSU's program is unique in that it seeks to help trainees develop self-awareness and hone professional skills and interpersonal skills that transcend any particular profession: communication, teamwork, and wellness. These skills complement guest lectures from biomedical professionals working in diverse fields such as law, regulatory affairs, academia, industry, and government; our goal is for scholars to learn more about themselves and possible career options, to see themselves in these jobs, or other jobs that rely on biomedical PhDs. Scholars finish their first year by completing an Individual Development Plan (IDP) with their mentor, and choose two externships (micro-internships) developed with the BEST team and their mentors in companies or organizations that will help the trainees explore career paths and practice applying their skills.



## OTHER GRANTS FOR THE GRADUATE SCHOOL

The Graduate School strives to continuously improve the graduate student and postdoctoral experience and education through research and initiatives designed to develop and test new programs. The NIH-BEST grant is just one of the various external grants funding such programming initiatives at the Graduate School. Read below for information on our other current programs.

- NSF-CAFFE: Center for Academic and Future Faculty Experience (CAFFE)
- NSF-AGEP: Alliance for Graduate Education and the Pro-



#### WHAT WE CAN DO FOR FACULTY

Our long-term goal is to support a positive culture of training for expanded careers in the biomedical sciences at MSU. We seek to complement the disciplinary knowledge given by the academic mentor by providing education about how people have used their PhDs in way a faculty member may not know.

#### WHAT WE CAN DO FOR THE BIOMEDICAL WORKFORCE

MSU BEST is designed to give scientific scholars tools and training to transition to the workforce - industry, government, academe, and other paths - with greater focus and purpose. Ultimately, the biomedical enterprise, and society more broadly benefit from well-rounded scholars who are better prepared to take on critical challenges in the fast-paced world of biomedical science.

Are you interested in engaging with MSU BEST by talking to trainees, acting as a mentor, or hosting an externship? Let us know! You can reach us at <u>msubest@msu.edu</u>.

fessoriate (AGEP) - focused on graduate students

- NSF-AGEP: Alliance for Graduate Education and the Professoriate (CIC AGEP) - focused on postdocs
- NSF-CIRTL: Center for the Integration of Research, Teaching, and Learning (CIRTL) expanded network
- NSF-WIDER: Widening Implementation and Demonstration of Evidence-Based Reform (CIRTL partnership)

Learn more about these grants and programs at grad.msu. edu/tgsgrants/.

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## MSU BEST TRAINEE SPOTLIGHT: NADIA AYALA-LOPEZ

#### By Julie Rojewski, PhD, BEST Grant Program Coordinator

The MSU BEST program, funded by the NIH Broadening Experiences in Scientific Training (BEST) program within the NIH Director's Fund, seeks to support biomedical PhD students and postdocs by helping them develop the necessary professional skills they can use in a variety of careers. For BEST Scholar Nadia Ayala-Lopez, a PhD student in Pharmacology and Toxicology, MSU BEST fits right into her goals: To find a career that suits her skills and her passions. She said, "I want to find a job to be my life, to be my purpose. Others have a job and other passions outside of work, but because of the way I was raised, I want my work to be my life." Ayala-Lopez grew up as the daughter of professional magicians and spent most of her childhood working on stage and traveling the world with her parents' act. "I think that's why I became a scientist," she joked. "Because it's NOT entertainment." Even more, working in magic made her realize that "people can be convinced of something that is not real, but science provides a way to find out, as best we can, what is actually true, so that we can make good decisions."



ABOVE: Nadia Ayala-Lopez in the Watts Laboratory, which focuses on cardiovascular pharmacology and trainee research. PHOTO CREDIT: STEPHANIE WATTS, PHD, MSU GRADUATE SCHOOL

Ayala-Lopez previously worked as a laboratory scientist, but decided to earn her Ph.D. to enhance her credibility as a scientist and to open professional doors. She has not yet decided her

## **CAPITAL CAMPAIGN PROGRESS UPDATE**

The Graduate School is participating in Michigan State's *Empower Extraordinary* Capital Campaign. The Graduate School's goal is \$9 million, all of which will go to supporting expendable and endowed graduate fellowships for our students. Our fellowships support students who will be the next generation of leaders and change agents in the public and private sectors. Many of these students are the first in their families who have attended college; most are the first to pursue a post-baccalaureate degree. Giving to university graduate fellowships supports the next generation who will be solving tomorrow's difficult problems and helping the country to remain competitive in a global economy.

As of November 30, 2015, the Graduate School has reached 89.68% of our goal, with a total of \$8,071,180 raised. We are thankful to all who have contributed to these efforts.

The Graduate School's campaign efforts are being led by the University Scholarships & Fellowships Development Ofcareer path, but she knows that "my decisiveness can be a real asset in some fields, like industry. I like working on big projects, developing strategic solutions," so she is looking for careers where that skillset is valued and rewarded.

For Ayala-Lopez, MSU BEST is a great opportunity to explore those industries, not only for the professional development but also the externship component. MSU BEST requires each BEST Scholar to complete two externships, or short- to medium-term professional experiences designed to help trainees experience potential career fields. Ayala-Lopez is currently an intern with MSU Technologies, part of the University's tech transfer office. In her role she explores the feasibility of commercializing various technologies emerging from MSU research activities. As a scientist she is well positioned to understand the technical aspects of this process, and she enjoys exploring this dimension of the intersection between science and business.

She said that MSU BEST is helping provide her with skills development and helping her narrow down her job search, post-PhD. Through MSU BEST and her leadership in other groups on campus, particularly the Pharmacology/Toxicology Graduate Student Organization and the Graduate Advisory Board, Ayala-Lopez has enjoyed engaging with graduate alumni. She said, "I think many of our alums would be more involved if they better understood the changes in academia—there are a lot of graduate students who don't WANT academic careers" and are eager to network with and learn from people who got graduate degrees and work in other fields.

MSU BEST is eager to partner with alumni and campus leaders who are interested in engaging with biomedical PhDs and postdocs around career issues. Throughout the year, we host guest speakers, arrange employer site visits, identify externship hosts, pair PhD mentors with BEST scholars, and other activities. If you are interested in learning more about or engaging with BEST, check out <u>www.best.msu.edu</u>.

fice. They launched a newly designed website this fall that provides information to donors, as well as stories about the impact of your support. Please visit it at: <u>supportforstudents.</u> <u>msu.edu</u>. There you will find additional information on the Graduate School's campaign priorities and you'll learn about how you can help us to continue to be able to attract and retain the best and brightest graduate students.

If you have any questions regarding the *Empower Extraordinary* campaign, please contact the University Scholarships & Fellowships team at <u>empower@supportforstudents.msu.</u> <u>edu</u> or via phone at (517) 432-7345.





This issue of The Graduate Post focuses on transformation in education. As universities,

business leaders, and federal agencies challenge universities to better prepare young researchers for careers outside academia, Michigan State, with funding from a competitive National Institutes of Health (NIH) Broadening Experiences in Scientific Training (BEST) Grant, is pioneering a program for biomedical doctoral students and postdocs that helps them acquire broad professional skills and practice those skills in externship experiences. Assistant Dean Stephanie Watts details the BEST initiative's unique approach to helping scientific scholars successfully and reflectively transition to the workforce. The BEST fellows will be prepared to take the lead in solving critical issues in public health and biomedical sciences. Meet one such fellow, Nadia Ayala-Lopez, whose unconventional path from a childhood on the stage as part of her parents' traveling magic show to a research lab working on cardiovascular pharmacology to an externship in tech transfer is traced in our MSU BEST trainee spotlight.

In the midst of national calls to transform science and technology education, Michigan State University's Graduate School is providing leadership in preparing future faculty to change the STEM classroom. In the articles on the NSF-funded Center for the Integration of Research, Teaching, and Learning (CIRTL) Network and the NSF-supported MOOC on evidencebased undergraduate STEM teaching, Associate Dean Henry (Rique) Campa III describes our efforts to ensure that today's doctoral students and postdocs learn and implement high-impact teaching methods.

The CIRTL Network and the MOOC complement other MSU Graduate School programs that foster innovative teaching across disciplines, including the Future Academic Scholars in Teaching (FAST), an intensive year-long learning

## **DEAN'S CORNER**

community in which doctoral students develop new teaching interventions and learn to assess their effectiveness, and the Certification in College Teaching Program, where doctoral students and postdocs develop a range of teaching competencies and create and implement classroom strategies designed to solve a challenge in their discipline. The participants in these programs are not only learning skills for their future faculty careers: they are increasing the effectiveness of undergraduate education at Michigan State.

We are proud to highlight the transformative work that two of our University Fellows have undertaken in the area of literacy education. Alumna Devon Brenner, now a department chair and faculty member at Mississippi State University, is recognized as a national expert on rural education, especially in the area of literacy. As an education policy fellow on Capitol Hill this year, she is helping to guide the revamping of No Child Left Behind. Current doctoral student Jon Wargo was recently named to the International Literacy Association's "30 Under 30" list, which identifies a new generation of innovators, advocates, and educators who are making a mark on global literacy education.

The University Distinguished and Enrichment Fellowships support students who will transform the educational landscape. The fellowships are used to recruit the top domestic applicants to MSU's doctoral and master's of fine arts programs. Unlike many similar fellowship programs across the country, the University Fellowships focus not only on academic success but on demonstrated leadership. Our fellows embody MSU's mission to educate globally engaged citizens who will provide innovative solutions to address society's rapidly changing needs. As part of our MSU's Empower Extraordinary campaign, we are hoping to increase the number of University Fellows we can support each year. You can find an update on our progress-and information on ways that you might help-on page 6.

## THE GRADUATE POST

The Graduate Post is published twice a year by the Office of the Dean of the Graduate School at Michigan State University for faculty, students, staff, alumni and friends.

We welcome your comments and suggestions for future issues. Please send your input to Editor Katherine Kelly at <u>graduatepost@grd.msu.edu</u> or 466 W. Circle Drive, East Lansing, MI 48824.

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# MICHIGAN STATE

## WE NEED YOUR FEEDBACK!

You may have noticed that we made some changes in this issue. We'd love to know what you think! Please visit <u>bit.ly/</u> <u>gradpostideas</u> to let us know what kind of content you enjoy and what ways we can improve. You can also provide us with any story ideas you might have.

Thank you in advance for your suggestions!

Katie Kelly, Editor



## FALL 2015 COMMENCEMENT

The fall 2015 advanced degree commencement ceremony was held on Friday, December 18, at the Breslin Student Events Center. MSU College of Osteopathic Medicine alumna Patricia LoRusso, now a professor of medicine and associate director of innovative medicine at Yale Cancer Center, addressed the graduates. Congratulations to all who completed their degree program in December!



PHOTO CREDIT: MSU BRESLIN CENTER INSTAGRAM (INSTAGRAM.COM/BRESLINCENTER)

## MISSION

To serve as an advocate for graduate education to the University and beyond, and to enhance the quality of graduate education at MSU in all its diverse dimensions.

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