University of Missouri South Africa Education Program

South African Program Update

University of Missouri System and University of the Western Cape

January 2017

A report from the University of Missouri
South African Education Program Committee:

- Dr. Joel Glassman, Chair, UMSL
- Dr. Niyi Coker, UMSL
- Dr. Lawrence Dreyfus, UMKC
- Dr. Greg Gelles, Missouri S&T
- Dr. Jeanie Hofer, Missouri S&T
- Dr. Michael Kruger, UMKC
- Dr. Wilson Majee, MU
- Dr. Mark McIntosh, MU
- Dr. Francisca Oboh-Ikuenobe, Missouri S&T
- Dr. Lois Pierce, UMSL
- Dr. Linna Place, UMKC
- Dr. James K. Scott, MU
- Professor Rodney Uphoff, Director, UMSAEP

UM System Interim President Michael Middleton and UWC Rector Tyrone Pretorius at the UM-UWC 30th Anniversary Celebration in September 2016.

INSIDE:

CELEBRATING 30 YEARS

In many respects, 2016 was both the best of times and the worst of times. The year 2016 marked the 30th anniversary of the signing of the Memorandum of Agreement that launched the University of Missouri/University of the Western Cape partnership. To celebrate this historic milestone, a sizeable delegation from the University of Missouri System led by Interim President Michael Middleton, his wife Julie Middleton, UM Curator Don Cupps and Missouri University of Science and Technology Chancellor Cheryl Schrader traveled to Cape Town in late May.

The 30th celebration at UWC opened with a cocktail reception on May 24 at the School of Public Health and was highlighted by a fabulous dinner with dancing at Pigalle's Restaurant. On

May 25, 26 and 27, the UM delegation and UWC faculty and administrators listened to a series of speakers from UWC and from each of the four UM System campuses. The presentations focused on past and ongoing research collaborations in fields ranging from physics, plant sciences and chemistry to multilingualism, diversity and community engagement.

The audience also heard about various study abroad programs. Several MU journalism students completing projects in Cape Town spoke about their experiences. Rod Uphoff described a fellowship program at the University of Missouri School of Law for UWC law graduates. Fourteen UWC students have earned an LLM in Dispute Resolution at MU. Two of the students, Lisa Draga and Sentebale Makara, eloquently described the benefit of their study abroad experience at MU. For a more detailed listing of all the presentations, go to: https://www.umsystem.edu/media/president/southafrica/uwc-um-30-anniversaruy-programme.pdf

In late September, Rector Tyrone Pretorius led a UWC delegation of 35 administrators and faculty to Missouri. Following a visit to UMSL by the Rector and some of the delegation, the entire UWC delegation was hosted by Interim President Michael Middleton at an opening reception at Providence Point on September 26. The following day, September 27, administrators and faculty from all four UM System campuses joined the UWC delegation in Columbia for a day-long celebration. Similar to the celebration at UWC, the program featured speakers describing their research collaborations. (https://www.umsystem.edu/media/president/southafrica/um-uwc-30-celebration.pdf) One of the highlights of the program was former UM System Executive Vice President Ron Turner's description of the launch of the University of Missouri South Africa Education Program in 1986. His presentation included the 10th anniversary celebration video produced in 1996.

A celebratory dinner was held on the evening of September 27. At the dinner, attended by all four UM Chancellors and Curators Cupps and Henrickson, Interim President Middleton presented Rector Pretorius with framed copies of letters written by President Nelson Mandela and Archbishop Desmond Tutu to UWC and UM congratulating them on the 10th anniversary of their partnership. The letters proudly hang in the UM System President's office and now outside of the Rector's office at UWC. In addition, Interim President Middleton presented the Rector with a framed copy of a resolution from the Board of Curators acknowledging the success of the UM/UWC partnership.

The members of the UWC delegation met with current and potential collaborators while at MU, and several of the UWC delegation presented at seminars. On September 28, the UWC delegation and many representatives from UM attended a special performance of *Mama Africa: The Musical*, a play written and produced by UMSL Professor Niyi Coker, with members of the cast traveling from South Africa to perform. The play topped off a memorable celebration.

On September 29, some of the UWC delegation traveled to UMKC, some to Missouri S&T and others traveled to UMSL. On each campus, the UWC delegates had an opportunity to learn more about the campus and to explore possible areas for collaboration. Just as the UM System delegation raved about the hospitality shown to them during the May visit to UWC, the UWC delegation spoke enthusiastically about the warm reception they received on each campus. It is this warmth and mutual respect that have long been a hallmark of this relationship.

Sadly, the UWC delegation returned to South Africa to find their campus engulfed in turmoil. The "Fees Must Fall" student protest movement shut down virtually every South African university and UWC suffered the same fate. Campus was closed for several months and faculty finished the semester as best they could

by working online and meeting with students in their homes or spaces off campus. Some students completed exams off campus while others had their exams postponed until 2017.

All are hopeful that a peaceful resolution will be found.

FACULTY REFLECTIONS ON THE 30-YEAR UM/UWC PARTNERSHIP

First, the exchange program has provided the single most widely shared international experience for UM faculty in all disciplines. Not only have so many of our faculty participated over the thirty-year history of the partnership, but their participation was done with an intentionality that other collaborative programs do not enjoy. From day one, both UM and UWC approached the relationship with a determination to achieve some specific goals and we have pursued those goals with great determination. By comparison, other international linkages seem ad hoc and even casual. And few, if any, survive the passing interest of the individuals who developed the original relationship. The UWC-UM linkage really is the gold standard for how we should be conducting our international partnerships, whatever the substantive goals and objectives.

Second, the exchange program has had an enormous cultural impact at the University of Missouri. One of the great challenges facing the US is the underlying race issue that divides our society. Of course, the same probably can be said of South Africa. The on-going engagement with UWC has not necessarily helped us to find answers but it has definitely encouraged us to develop the vocabulary and incentive to talk about and explore our own racial challenges. It is difficult to site tangible evidence of this observation but I remain morally certain that the on-going engagement with UWC has empowered many UM faculty to address challenges within our own society.

Third, as we look to the future, we have a shared asset that we must continue to nurture and support. The fact that we know each other so well, warts and all, is quite an extraordinary situation. UMSL has no other international relationship that is so deeply ingrained into our consciousness and DNA. And, we can count on each other. As we look for new research partners, we need to look first at the other. UM and UWC have established a trust relationship. That relationship is very valuable and needs to be protected and preserved with continuous reinvestment. Let us use this occasion to commit to the next thirty years!

Joel Glassman, PhD
Associate Provost and Director
International Studies and Programs
University of Missouri-St. Louis

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My partnership with Prof Carole McArthur started in 2002 when I first visited the University of Missouri Dental School in Kansas City. At the time, I was going through a very tough period when I was unable to secure research funding due to a gap in my curriculum vitae brought about by an increased lecture load and no time available for research. Prof McArthur willingly agreed to host me for a visit to her laboratory where I spent three months working on a research paper which was published shortly after. Since then, I have returned to her labs for another visit (2005) and she has visited my labs at UWC on two occasions (2011), once supported by the UWC-UM exchange and once on a travelling scholarship awarded to me by the Third World Academy of Science (2013).

This collaboration has resulted in the publication of 3 journal papers (2 published, 1 under review) and 4 conference presentations (2 international and 2 local). The outputs of our collaboration paved the way for me to successfully generate funding for my research. It also facilitated the visit by my current postdoc Dr. Abrantes, to Prof McArthurs's HIV clinic in Cameroon, where he did much of his PhD sample collection for our study of Candida-resistant candidiasis in HIV-positive patients. Through Prof McArthur, we are also able to house in our labs instruments such as the TREK and BioFilm Systems (granted on loan for the duration of our collaboration and which we could not otherwise afford to have), and on which she has provided the training for my postgraduate students. This has proved to be invaluable for our studies on multidrug resistant pathogens and biofilm formation.

The collaboration with Prof McArthur has significantly contributed to our research agenda and she continues to assist me through her various networks, many of which I may not normally have access to. Ours has been a long and productive collaboration and I desire to continue this collaboration, since there are so many research avenues which we may yet explore.

Professor Charlene Africa
Department of Medical Biosciences
UWC

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The co-operation brings together an enthusiastic team of complementary expertise (e.g. urban studies, education, child language development, African linguistics and sociolinguistics) around questions where multilingualism figures centrally. No less important is that the cooperation is already yielding a wider and more intensive engagement across the language disciplines at UWC itself.

The research promises to be cutting-edge in many respects. The construction of the corpus itself poses valuable theoretical and methodological challenges. When built, the wide range of multilingual and multimodal data types (formally elicited and spontaneous from a variety of languages) will be amenable to a range of methodological approaches and theoretical interests. In particular, we foresee exciting trans-disciplinary explorations of the workings of boundaries and borders (linguistic, urban, social, cognitive, ecological, and mathematical).

We anticipate collaborative projects to emerge in areas of interface between language, society, education, development and politics.

Professor Chris Stroud
Professor, Department of Linguistics and
Director of the Centre for Multilingualism
and Diversities Research
UWC

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The historic partnership between The University of the Western Cape and the University of Missouri has fostered ground-breaking basic and clinical research in healthcare for the African public.

As described in 2005 by Mr F Gray Handlley, Health Attaché of the US Embassy in a letter to the Director General of Health of the Government of South Africa:

"The research program is especially significant because it is one of the first opportunities for medical doctors, scientists and South African Traditional Healers to cooperate as equal partners in exploring indigenous African phytotherapies for AIDS, secondary infections and immune modulation. The program creates a unique bridge between western and African medical systems"

Professor William Folk
University of Missouri
Columbia

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The partnership with the Department of Physics and Astronomy at the University of Missouri-Columbia assisted in my professional and personal growth; primarily through the interaction with world-renowned researchers in

multi-disciplinary fields ranging from Condensed Matter Physics and Astronomy to Physics Education. As a result, I could contribute towards the development of our department's collective research agenda and strategy. Through the UWC-UM exchange program I also gained access to state-of-the-art characterisation facilities and expertise, which resulted in the expansion of my research agenda to include x-ray reflection for the structural characterisation of nano-structures and organic/inorganic nano-structured heterojunction solar cells. Engaging with post-graduate students and their supervisors at UM also had a positive impact on my supervisory capability with my students. The collaboration also resulted in my appointment as Adjunct Professor at the Department of Physics and Astronomy at the UM-Columbia.

My initial exchange also led to the exchange of two faculty members in our department and the co-supervision of my post-graduate students with Professor Paul Miceli, University of Missouri, Columbia. Prof Miceli visits UWC annually and also lectures in the MSc (Nanotechnology) programme. In addition, one of my PhD students will visit the x-ray laboratory of Paul Miceli from July to September 2016, where he will investigate the nano-structural properties of organic/inorganic heterojunctions using x-ray techniques.

Professor Chris Arendse
Department of Physics
UWC

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The partnership between the UWC Community Engagement Unit (CEU) at the University of the Western Cape and the University of Missouri Extension commenced in 2006 with the 20th anniversary celebration at UWC. This partnership was formalized during a second visit in 2009 followed by four exchange visits, regular Skype meetings, joint webinars, developing a joint a grant proposal and joint scholarly activities – resulting in the design and implementation of the International Community Leadership Development Programme (ICLDP) pilot project from 2013-2015. The ICLDP integrated all three legislated segments of higher education: teaching and learning, research and community engagement. MU Extension has a strong history in community engagement and brings to the table established processes in successful community engagement activities. UWC brings experience with marginalized and disadvantaged communities that provide opportunities to develop, implement and assess innovative practices that work in communities. This benefits both South African and Missouri communities. The ICLDP theory-driven evaluation research provides a basis for the development of a research agenda in university partnership models, transformational learning and community development. This is evident in the published evaluation report and the upcoming presentations on the ICLDP at three international conferences from June to October 2016 followed by three prospective publications in scientific journals.

Professor Priscilla Daniels
Director: Community Engagement
UWC

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The UWC/UM partnership is remarkable not just because it has lasted 30 years or because it was the first such partnership between an American University and a disadvantaged South African university. Rather, it is remarkable because the program has had an enormous long-lasting benefit for faculty and students from both universities who participated in the program. For many, and that includes me, the visit to their partner institution was life changing. Faculty have seen their professional lives and standing enhanced by their relationship and interactions with their UWC or UM colleagues. Faculty collaborations have produced many publications. The collaborations also have led to improved teaching as well as curriculum reform. New courses have been created and new techniques developed. Moreover, research collaborations have led to significant external grants, which contribute both financially and to the reputation

of both universities.

Students who have travelled to the partner institution also have benefited greatly from exposure to a different culture, different perspective and different experiences. For many, it is an unmatched academic experience. Indeed, it also benefits the host-institution students by breaking down myths they previously held about their counterparts. The possibility for future collaborations is huge. It is far easier to trust a reliable steady partner who has welcomed faculty and students for 30 years than to enter into new relationships that may appear promising but may be nothing more than a mere passing fad. Thirty years of sustained success despite leadership changes and a cast of new faculty at both institutions strongly suggest the future is bright.

Professor Rod Uphoff
Emeritus Professor and Director of the University of Missouri South African Education Program
University of Missouri
Columbia

MAMA AFRICA: THE MUSICAL

One of the highlights of both the 30th Anniversary celebration in Cape Town and in Columbia was the performance of the musical *Mama Africa: The Musical*. The musical recounts the compelling story of the South African icon, Miriam Makeba. Ms. Makeba also lived in the U.S. and was an influential musician and a champion of civil rights. UMSL Professor and UMSAEP Committee member Niyi Coker researched, wrote, directed and produced the musical. Many others at UMSL contributed to the play, most notably Niyi's wife Angela Coker, and Glen Anderson and Felia Davenport. UMSL Associate Provost for Academic Affairs and Director of International Studies and Programs at the UMSL and UMSAEP Chair Joel Glassman co-produced the show that ran four nights in St Louis.

Who was Miriam Makeba?

Miriam Makeba was one of the most consequential African artists of the 20th century. She emerged from the vibrant illegal nightclub scene in the townships and Bohemian enclaves of Johannesburg in the early 1950s. Her first tour abroad turned into 31 years of exile when the South African government, displeased with her public criticism of apartheid, denied her the right to return home. During those three decades, she introduced the world to both the rich music and dance traditions of Africa and the violent struggle for civil rights and democracy in South Africa. She sang in the White House as well as in the most venerable concert halls of Europe and the U.S., and spoke with equal passion on multiple occasions before the United Nations. Makeba received several honorary doctorates and was awarded the Presidential Award in 1999 by South African President Nelson Mandela.

Mama Africa: The Musical

Mama Africa: The Musical is the first stage production to tell the life and times of Miriam Makeba: her activism in building international awareness of apartheid; her artistic success; and her endurance in overcoming betrayal, ostracism, failed marriages and the death of her only child while in exile.

UWC Director of the International Relations Office Leolyn Jackson co-produced the show for its three-night stint in Cape Town. On May 27, the night of its final performance in Cape Town, the UM delegation attended along with many from UWC including Rector Pretorius and former Rector Brian O'Connell. The play received an enthusiastic standing ovation. Niyi spent months in Cape Town recruiting cast members and musicians, rehearsing with them and trying to raise money to bring the entire cast to Missouri.

Following their performances in St Louis, *Mama Africa* played to an enthusiastic crowd at Jesse Auditorium in Columbia on the evening of September 28. Niyi then took the play to New York City for one performance. (http://amsterdamnews.com/news/2016/oct/13/miriam-makeba-magnificently-honored-mama-africa-mu/). In addition to Niyi's herculean efforts, the generous support (both in time and financial assistance) of many at UMSL, MU, UWC and the UM System made this show possible. Not only did it bring the story of an incredible performer to the attention of a new generation on two continents, but it also enabled a number of talented young musicians, actors and actresses to experience the trip of a lifetime. To read more about *Mama Africa*, please go to the websites below.

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Mama Africa: https://www.uwc.ac.za/News/Pages/Mama-Africa%E2%80%93The-Musical-The-Life-and-Times-of-an-International-Legend.aspx

Miriam Makeba: http://www.biography.com/people/miriam-makeba-939599

ABOUT PRESIDENT-DESIGNATE MUN Y. CHOI

Dr. Mun Y. Choi
President-designate of the UM System

Following a near year-long national search, on November 2, 2016, the University of Missouri Board of Curators announced the appointment of Dr. Mun Y. Choi, 52, as the 24th president in the history of the University of Missouri System. Dr. Choi will succeed Interim President Michael Middleton on March 1, 2017.

Dr. Choi's 24-year career in higher education includes his present position as provost and executive vice president at University of Connecticut (UConn), one of the nation's top 20 public universities in the latest *U.S. News* rankings. Since 2012, he has overseen a budget of $700 million while working with 1,500 full-time faculty, 31,000 students and 2,000 staff across 12 schools and colleges including Schools of Medicine, Dental Medicine, and Law. Under his leadership, UConn developed several innovative new programs that have resulted in enrollment growth, increased faculty hiring, innovative research, and new and expanded industry partnerships.

Born in South Korea, Dr. Choi came to the U.S. as a child. As a young man, he worked in his family's successful business in Chicago, and later graduated from the University of lllinois at Urbana-Champaign with a bachelor's degree in general engineering in 1987. He later earned a master's degree and doctorate in mechanical and aerospace engineering from Princeton University.

Prior to serving as provost and executive vice president, Dr. Choi was dean of engineering at UConn from 2008 to 2012. Earlier, he was department head of mechanical engineering and mechanics at Drexel University (2000-2008) and assistant and associate professor at the University of Illinois at Chicago.

"Becoming president of the University of Missouri System is unquestionably the pinnacle of my professional career," said Dr. Choi. "As a product of and passionate champion for public higher education, I will advocate tirelessly on behalf of our exceptional institutions with state and national business, political and civic leaders to achieve excellence in all that we do, and make sure our great campuses realize their full potential."

UWC-UM-GHENT UNIVERSITY MOU

In January 2013, University of the Western Cape hosted a meeting with its two oldest international partners, the University of Missouri System and its second oldest partner, Ghent University, to discuss the possibility of trilateral collaborations. At the conclusion of the meeting, MU, UWC and Ghent signed a Memorandum of Understating (MOU) pledging to explore collaborations.

In October 2015, Ghent hosted a meeting attended by a UWC delegation led by Rector Tyrone Pretorius and by a MU group led by MU Chancellor Bowen Loftin to identify areas of overlapping research strength. As a result of that meeting, MU Interim Chancellor Hank Foley, Rector Pretorius and Ghent Rector Anne De Paepe each agreed to provide 20,000 euro to spur potential research collaborations in selected areas: plant sciences, linguistics and public health.

At the 30th celebration at UWC in May 2016, Ghent representatives attended and UWC broached the subject of expanding the MOU to include the other three UM System campuses, University of Missouri-Kansas City, University of Missouri-St. Louis and Missouri University of Science and Technology in this trilateral initiative. UWC and Ghent wished to pursue research collaborations in three additional areas (urban studies, neuroscience and astrophysics); other UM System campuses have research strengths in these areas. Following his return from South Africa, UM System Interim President Middleton discussed with all four chancellors the merits of expanding this trilateral initiative and each of them expressed interest in joining with MU in the partnership.

A new MOU was drafted and signed by Middleton and each chancellor in December and then sent to UWC. UWC has now signed the MOU and forwarded it to Ghent. The MOU names this trilateral collaboration as the Three Continental Partnership (3CP) and sets up a mechanism to provide modest funding to support research collaboration in the six areas noted above. Under this proposed initiative, each UM System campus would agree to provide 5000 euros for the 2017 calendar year to cover costs of UM researchers traveling to Ghent or UWC and also hosting their researchers traveling to one of the UM campuses.

This year the bulk of the funding went to support work in linguistics and plant sciences. Both areas show considerable promise for competing for external funds. Ghent's strength and interest in urban studies, neuroscience, public health and astrophysics and their existing relationships with UWC suggest real potential in these other areas as well. The hope is that this modest funding may generate some promising collaborations and lead to competitive applications for external funds in Europe, South Africa or the US.

J-SCHOOL STUDENTS EXPERIENCE SOUTH AFRICA

Contributed by Randy Smith

For the last three years, the Missouri School of Journalism has taken about 20 students to Cape Town, South Africa, to work with the Mayibuye Archives on the campus of the University of Western Cape. The trip is led by MU Professor Randall Smith with the support of Professor Rod Uphoff.

The Mayibuye Archives are the home of many of the documents and journalism that document the struggle against apartheid. The purpose of the trip is to capture the newsmakers and their stories while they can still be interviewed and photographed.

The trip in 2015 gave the students an opportunity to hear from three presidents of South Africa, including current President Jacob Zuma and Nobel Peace Prize winner F. W. de Klerk. Beyond meeting senior government and business leaders, the students worked with the documents of Albie Sachs, who spoke at the University of Missouri in 2015 and as one of the primary drafters of South Africa's constitution.

But the reporting went deeper. One of the students' projects focused on District 6, the community that was forcefully moved during the apartheid years from their residences in downtown Cape Town to encampments far away. Here is the story done by Missouri students Sarah Darby and Yizhu Wang: https://historyofdistrict6.wordpress.com/

Senior journalism student Ryan Collins completed an in-depth project about the effectiveness of post-apartheid economic policy. He said South Africa became a home away from home for him during the three-week trip.

Journalism graduate student Yizhu Wang pets a cheetah at the Tshukudu Game Reserve in South Africa. The group ended their reporting trip with a three-day safari in the north region of the country.

"It is a gorgeous country with beautiful lands and breathtaking people," Collins said. Its politics is just as unique as its geography. It is consumed by the past too much, and is trying to spin itself into the future too fast, causing problems. It has enormous potential and is so close to fulfilling it."

Journalism graduate student Linly Lin, who completed a project about the future of renewable energy in South Africa, felt a similar connection to the country. She said her favorite memory was interviewing a group of women at an area township.

During apartheid, hundreds of thousands of people were classified according to race and forcibly relocated to slums, known as townships, outside the city limits. "This area, like many other exclusive black residences, witnessed the unfolding of apartheid," Lin said. "Deprivations of electricity, food, infrastructure and everything suppressed people's life here, but the church ladies, in their sixties and seventies, told me they had to persevere and struggle to survive. Faith

and belief helped them to keep living. I see from everybody living in the shacks that life is so beautiful."

At the end of the interview, the women called Lin "sister" and hugged her goodbye.
"The whole series of lectures and student reporting projects exposed me to all facets of the society," Lin said. "I realized that all societies are similar, reflecting each other's problems and solutions. At the end of the day, people are people. Looking into another society, I can understand my own much better."

To learn more about the Missouri School of Journalism's work in South Africa, go to this website: https://mvq6b.wordpress.com

Harold Herman, Dean of the Faculty of Education at the University of Western Cape, shows University of Missouri students a sustainability project in the Kayamandi township. Herman, who was an active voice in the anti-apartheid movement, helped arrange interviews for the three-week trip

PRESIDENT DINNER
(From left) Students Elizabeth Tharakan, Luke Brodarick, Jake Kreinberg and Tatiana Darie smile at a dinner panel called, "Twenty One Years of Democracy & What the Future Holds for Business and Civil Society." The students heard former South African presidents FW DeKlerk and Kgalema Motlanthe speak at the event.

UWC STUDENT WINS MAJOR AWARD

On September 28, 2016, at Morningside, Sandton in Johannesburg, Miss Usisipho Feleni received the "L'Oreal-UNESCO Fellowships for Women Scientists from Sub-Saharan Africa Doctoral Award for 2016," for her research work on "Smart Bio-electrochemical Sensing and Signalling of Inter-individual Responses to Breast Cancer Treatment." She follows a line of SensorLab female researchers who won the award in 2012, 2013 and 2014.

Miss Feleni also won the 2016 South African Women in Science Award, WISA (TATA Doctoral Scholarship) which she received in August 2016.

Miss Feleni obtained her training in sensors and signals at the UWC Sensor Lab, the University of Missouri School of Medicine and the Centre for Biosensors and Bioelectronics at Linköping University in Sweden.

Miss Feleni is one of 12 UWC students who have participated in a research program coordinated by the MU Office of the Research and the MU School of Medicine. The program runs for nine weeks from late May to late July.

Students selected for this program live in on-campus, air-conditioned housing (double rooms), and receive a full meal plan, covered by the program. Summer interns are also provided with funds to cover one hour of academic/research credit, travel to and from Columbia, and a stipend of $1,500. Students work on their own research project under the guidance of an MU School of Medicine faculty mentor and present their results at a poster forum at the end of July.

2016 Faculty Exchanges

In 2016, as in prior years, UM and UWC faculty members participated in a number of productive exchanges. The following example highlights the kind of collaborations that have been the hallmark of this partnership:

Visit to Cape Town Nov. 12 – Dec. 10, 2015
Toward Building a New UMKC-UWC Collaboration to Survey the Cold HI Gas Supply of Massive Quenched Galaxies Across Cosmic Time

Submitted by Dr. Daniel H. McIntosh
Distinguished Teaching Associate Professor, Department of Physics & Astronomy
University of Missouri-Kansas City (UMKC)

September 26, 2016

UWC Host: Dr. Romeel Davé
Professor, SARChI Chair, Department of Physics
University of Western Cape (UWC)

1. Overview

Thanks to support from the UMSAEP Linkage program, my first (*and definitely not last!*) visit to Cape Town and the Western Cape region of South Africa was a successful and rich experience. During four weeks in late 2015, I visited UWC and six additional research/education institutions, plus I attended a collaborative workshop and a scientific meeting. The primary purpose of this trip was to work with a current collaborator, Prof. Davé (SARChI[1] Chair, UWC), to initiate a *long-term* UMKC-UWC collaboration together with other international partners toward an ambitious survey of the neutral atomic hydrogen content in evolutionarily important galaxies using major upcoming advances in radio astronomy that will make South Africa the global focal point of such scientific research. Additionally, my visit included presentations and discussions related to my other scientific pursuits and my education innovations.

2. Proposed Objectives (*abbreviated*)

The goal of the Linkage proposal was to initiate two pilot studies to set the stage for an ambitious new survey to constrain how much neutral atomic hydrogen (HI) gas is available to *novel* samples of massive galaxies that theoretically *should* be forming stars but are not. The growth of galaxies is one of the most active areas in astrophysics. A primary growth channel is the gravitational accretion of fresh HI that fuels subsequent production of new stars. Yet, a key empirical finding is the observed buildup of the galaxy population appears dominated by massive 'dead' (non-star-forming or 'quenched') objects, rather than star formers like the Milky Way. Thus, it is clear that the quenching (shutdown) of star production is a key aspect of galaxy growth, yet, there is a critical gap in our knowledge about the external gas supply available to such galaxies, which impedes our ability to properly model important quenching physics at play in galaxy evolution. HI provides a unique opportunity to explore the fueling and quenching of star formation in massive galaxies. Thus, what is ultimately needed is a major census of the HI reservoirs of carefully targeted galaxies at different phases of the quenching process, but until recently the ability to survey the cold HI content of galaxies using 21cm emission has been

[1] South African Research Chairs Initiative

severely limited. With the upcoming (MeerKAT) and future (Square Kilometer Array Phase 1, SKA1) radio astronomy advances in South Africa, plus the existing UMKC-UWC connection, the time is ripe for the ambitious **Quenching HI Survey** (QHIS). This UMKC-UWC collaboration aimes to provide critical information about the available fuel for star formation around carefully selected galaxies from two premiere resources: (i) the Sloan Digital Sky Survey (SDSS), and (ii) CANDELS[2] the largest ever Hubble Space Telescope survey of which myself and Davé are Co-I's. The following 4 key objectives were defined to investigate the feasibility and lay the ground work for the QHIS collaboration:

1) Calculate 21cm HI emission (absorption) detection limits for SDSS (CANDELS) galaxies.
2) Write a MeerKAT proposal to probe HI environment of SDSS galaxies in low-mass halos.
3) Write a LADUMA-CANDELS proposal to probe HI evolution in massive galaxies.
4) Assemble team for pilot studies and future Quenching HI Survey (QHIS) collaboration.

3. Status of Proposed Objectives

My Cape Town visit was instrumental for formally establishing the initial QHIS collaboration and for refining the planning to execute this ambitious survey. Networking with key individuals, visiting the SKA South Africa Office, and attending the 10th Annual SKA Bursary "Meeting of Minds" were all important for understanding the current state of the telescope array and data center infrastructure, the South African National Research Foundation (NRF) funding and strategic science goals, and UWC's role in SKA. This information, plus my efforts in Cape Town and subsequently, have led to a modest UMKC proposal (7.1e) to formalize pilot (proof-of-concept) observations (QHIS Phase 1) with MeerKAT in 2017, now that the promise to detect HI gas to unprecedented depth and distance is finally here with first light achieved on the MeerKAT 16-dish radio interferometer array (AR1[3]) earlier in 2016 (see Fig. 1, left). The proposed work will be leveraged for a major National Science Foundation (NSF) proposal submission in Nov. 2017 to support the execution, analysis and publication of QHIS Phase 1, and to prepare for Phase 2 proposals starting 2018 when the MeerKAT 64-dish array (AR3) is fully operational and world-class. In what follows, I briefly describe the status of the 4 originally proposed objectives.

3.1 Objective #1

Our preliminary calculations indicate that the MeerKAT 32-dish array (AR2) and 64-dish array (AR3) configurations should be able to distinguish a number of key predictions regarding the HI fuel available to small-halo, central galaxies selected from the SDSS. More distant galaxies from CANDELS will be more difficult (see 3.3). Ultimately, South Africa will become the major player in comprehensive and deep HI surveys in the coming decade when SKA1-MID (197-dish) comes on line. For this reason, theorists like QHIS Co-I Davé are increasing their efforts to understand the HI gas content of galaxies in cosmological hydrodynamic simulations (Davé et al. 2013), which motivates and aids the QHIS. Using estimates of the HI gas mass content from new theoretical simulations (Davé et al. 2016, see Fig. 1, right), we computed expected 21cm emission detection limits for a range of HI reservoir masses (10^8 to 10^{10} Msun) based on the typical sample (see 3.2) stellar masses (2 to $4x10^{10}$ Msun) and different phases before and after quenching. We repeated these calculations for 3 separate MeerKAT configurations (AR1, AR2, AR3) tailored to the SDSS sample. These computations demonstrated the feasibility of the QHIS and helped optimize our observing strategy, which were instrumental in refining the Phase 1 target list and proposal draft in preparation for the *first* MeerKAT public CFP anticipated in early 2017 (see 3.2).

3.2 Objective #2

The excellent MeerKAT engineering has had several key successes in 2016, notably first light with AR1 and 30% better-than-expected sensitivity from the array receivers. Despite this, science commissioning observations have been delayed and the science infrastructure has met challenges. The SKA Cape Town office has been open for several years, yet only since spring 2016 has its administration included a Chief Scientist (Fernando Camillo). Additionally, the critical data center necessary to produce and provide science-ready data products, the Institute for Data Intensive Astronomy (IDIA), is yet to be finished or

[2] Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey (http://candels.ucolick.org/)

[3] Array Release 1 (http://www.ska.ac.za/wp-content/uploads/2016/07/info_sheet_ar1_2016.pdf)

staffed. Initiated just prior to my visit[4], the IDIA anticipates needing 100s of data scientists to analyze an unprecedented flow of Big Data from the SKA[5]. All of this has meant delays of at least one year from our original planned objective to submit an early 2016 Phase 1 proposal for pilot observations with MeerKAT AR1. The latest word from SKA is that an official early science CFP will be open to the international community in Mar. 2017. The expectation remains that early science observations will be allocated 30% during the next 5 years for PI-driven projects like QHIS Phase 1, with the remainder of the observation schedule allocated for previously awarded large key science projects and director's discretionary time. As such, we revamped our initial proposal which we are finalizing in late 2016 for MeerKAT AR2 observations. We will submit this QHIS Phase 1 proposal for the initial CFP in early 2017 with anticipation of observations to be carried out in late 2017.

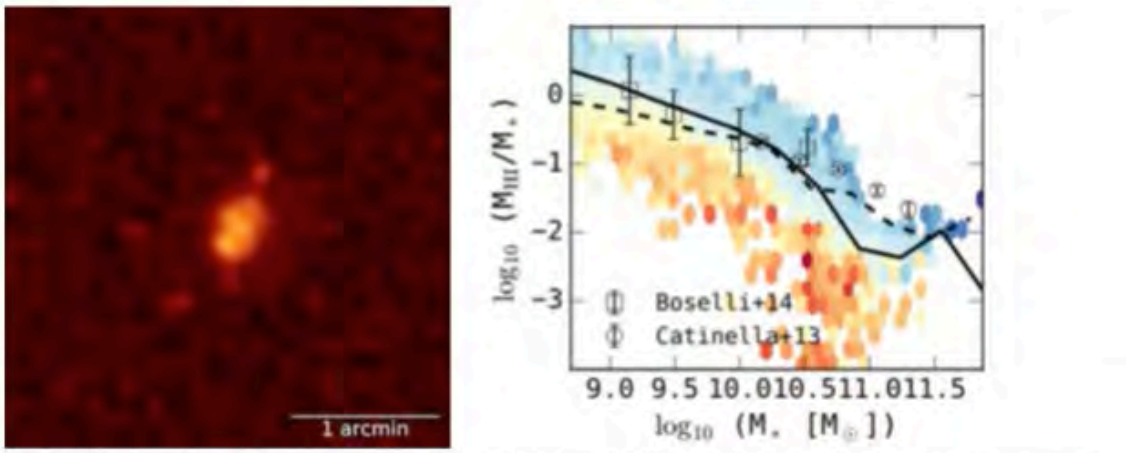

Figure 1: *Left (a):* A zoomed in sections of the MeerKAT first light image showing the 21cm emission from HI in the vicinity of a star-forming galaxy. Credit: SKA/MeerKAT *Right (b):* Predicted HI mass fraction (relative to stellar mass) as a function of the rate of star production (SF: blue data, quenched: red data) from MUFASA simulations. Comparison to observations by Catinella et al. (2013) and Boselli et al. (2014). From R. Dave, in prep.

As described in our original proposal, the targets are drawn from the identification by my team of recently-quenched and long-quenched galaxies (RQGs & LQGs; McIntosh et al. 2014) that live in cosmic environments that theoretically should still produce stars (Gabor & Davé 2012, Keres et al. 2012). The discovery of a significant number of such galaxies raises important questions about whether or not these galaxies have access to a fresh supply of gas, and if they do, why do they remain quenched? Having ruled out other possibilities, we speculated that most may be quenching as the result of the small host halos being dominated by hot gas that impedes cold gas flow to the center where the galaxy resides. An obvious experiment is to probe their halo's atmosphere (gaseous content bound to the dark-matter halo but external to the galaxy) using ultraviolet (UV) spectroscopy with the *Hubble Space Telescope* Cosmic Origins Spectrograph (*HST*/COS). UV spectra include important tracers of hot-gas as well as HI. In preparation for HST cycle24 CFP, we did a comprehensive search of the UV-bright AGN catalog (Veron-Cetty & Veron 2010) for good background light sources to probe the halo gas near our target galaxies. We found a paucity of viable UV targets, which *further motivates the need for the QHIS to achieve a direct connection between HI availability and quenching*. Our survey design involves a careful census of the HI gas properties for galaxies at different stages of the quenching process that are otherwise physically indistinguishable. We have selected the Phase 1 (proof-of-concept) targets from a refined subset of McIntosh et al. (2014) RQGs plus control samples of dead (LQGs) and alive (star-forming)

[4] http://www.uct.ac.za/dailynews/?id=9342

[5] http://www.universityworldnews.com/article.php?story=20150906085207602

counterparts matched in terms of stellar mass, redshift, shape (spheroidal), environment (centers of halos of mass $<3x10^{12}$ Msun based on Yang et al. 2007 data), and observable from Northern Cape, South Africa. These criteria net at least 25 galaxies in each of 3 sets. We will request MeerKAT AR2 observations for 10 of each.

3.3 Objective #3

LADUMA[6] is an ultra-deep survey of neutral hydrogen gas in the early universe planned for MeerKAT AR3. It is one of the previously approved Key Science Projects. Based on calculations (objective #1) and discussions with LADUMA Co-PI's Sarah Blyth and Andrew Benson during the SKA Bursary Meeting and a visit to University of Cape Town (UCT), we have decided to shelve a formal LADUMA-CANDELS proposal for now pending first results from LADUMA, which are not anticipated until 2018 or later. Nonetheless, we have identified CANDELS targets of interest in the LADUMA field, and Prof. Blyth is excited to bring her expertise to the QHIS collaboration as a Co-I. When LADUMA data becomes available we will be able to test the feasibility of extending QHIS to large cosmic look-back times when SKA1 comes on line in the next decade (Phase 3). Related to objective #3, I met D.J. Pisano at the SKA Bursary Meeting and we discussed his involvement with CHILES[7], another ultra-deep HI survey (Fernandez et al. 2013) similar to LADUMA. This survey is targeting COSMOS[8], which is one of the 5 CANDELS legacy fields. As such, we will work together to identify sources to further test the feasibility of QHIS Phase 3.

3.4 Objective #4

Networking at multiple Cape Town institutions and aided by connections from Prof. Davé during the SKA Bursary Meeting, we have succeeded in establishing the initial core collaboration of international observational and theoretical experts in the study of galactic gas accretion and star formation quenching needed to acquire, analyze and interpret the HI data for the QHIS, and to preliminarily investigate the survey's feasibility, and to define the initial samples for pilot study proposals. The team is listed here:

Name	Role	Institute	Expertise
Prof. Sarah Blyth	Co-I	UCT	HI with MeerKAT/SKA, Co-PI LADUMA MeerKAT Key Project
Prof. Michelle Cluver	Co-I	UWC	Multiwavelength galaxy surveys, GAMA[9] Scientific Advisory Committee
Prof. Daniel McIntosh	PI	UMKC	Observations of galaxy evolution, Co-I CANDELS
Prof. Romeel Davé	Co-I	UWC	Theoretical simulations of galaxy evolution, Co-I CANDELS & LADUMA
Prof. D. J. Pisano	Co-I	U West Virginia	Extended HI mapping of nearby galaxies, Co-I Chiles survey
Prof. Todd Tripp	Co-I	U Mass - Amherst	UV probes of halo gas, Co-I COS Halos Survey

4. Additional Noteworthy Activities

4.1 Scientific

In addition to the key objectives described above, my Cape Town visit included networking with international theory experts from the Max Planck Institute for Astrophysics (MPA) at the inaugural MPA-UWC collaboration meeting organized by Prof. Davé, and funded by the NRF and the German Research Foundation (DFG). The topic of discussion was the study of gas in galaxies across cosmic time using hydrodynamic simulations, with a particular focus on comparing to observations with MeerKAT and SKA1. I gave a contributed presentation (7.2a) about the McIntosh et al. 2014 study, and learned about Prof. Kauffmann's (MPA) efforts to measure HI in massive galaxies. Moreover, I had the pleasure to spend several days at the South African Astronomical

[6] Looking At the Distant Universe with the MeerKAT Array (http://www.ast.uct.ac.za/laduma/Home.html)

[7] COSMOS HI Large Extragalactic Survey (http://chiles.astro.columbia.edu/index.html)

[8] Cosmic Evolution Survey (http://cosmos.astro.caltech.edu/)

[9] Galaxy And Mass Assembly (http://www.gama-survey.org/)

Observatory (SAAO[10]). In the heart of Cape Town at the foot of Table Mountain sits the national observatory. Founded in 1820, it is the South African center for optical and infrared astronomy, my area of expertise. There, I met with scientists including Dr. Gilbank, learned about his ongoing projects with the South African Large Telescope (SALT[11]), discussed related projects for possible future collaboration, attended a seminar on large projects with SALT, and gave a colloquium about my scientific research (7.2c). These meetings led to my visiting SALT to learn firsthand about this world-class facility.

4.2 Educational

Besides the broader impacts of building the QHIS collaboration, my Cape Town visit included a number of activities designed to advance understanding and promote teaching, training, learning, recruitment and retention in the astronomy-related sciences. These activities included giving a seminar (7.2b) to UWC and SKA faculty and students about the growth of galaxies through merging. Moreover, my visits to UWC included informal round-table discussions about science education with Physics faculty and lecturers, and a formal seminar (7.2d) to the department regarding my high-impact teaching and research training innovations for fostering success among graduate students, advanced undergraduate majors, and non-science majors. We also discussed my successes with strategies for engaging young minds with an eye toward recruiting the next generation of South African astronomers.

It is interesting to note that Introductory Astronomy courses, a mainstay of U.S. university science introduction and recruitment, are not offered in typical South African universities and colleges. Instead, the cultural expectation is that students start their university education with a very specific goal from day one; e.g., a degree in engineering or computer science. This is a professional degree model, and the rigidity of this model will be a challenge for inspiring youth to strive for careers in fundamental sciences like astrophysics, especially for the severely economically depressed, non-white population who have few science-related opportunities or preparation prior to higher education. These challenges are similar to those of underrepresented minorities in the U.S., the notable difference is that in South Africa these are the challenges of the *underrepresented majority*. To address this challenge, I learned that the UWC Department of Physics initiated a program in which majors with poor secondary school preparation will develop their year 1 education over a 2-year period. The idea is to help these students succeed especially the critical gateway courses like trigonometry, pre-calculus and introductory physics, so that they are ready to enter true sophomore coursework with their privileged peers. I believe that this UWC pre-STEM training idea has substantial merit, so much so that I have already begun to initiate plans for a similar program at UMKC, which included the submission of a formal preliminary proposal to the NSF (7.1a) in collaboration with the UMKC School of Computing and Engineering, the Institute of Human Development, and other departments plus community STEM organizations.

Finally, related to my success in developing an effective high school to college pipeline (*A Bridge to the Stars*[12]) for engaging and recruiting underserved urban youth, I had extremely fruitful discussions with Eli Grant from the International Astronomical Union's Office of Astro Development[13]. We met at both the IAU OAD office on the SAAO grounds and during the SKA Bursary Meeting. These discussions with Dr. Grant have led to significant improvements to my program and a number of related proposal submissions (7.1b, 7.1c, 7.1d).

5. Timeline of Activities and Meetings:

Here, I provide a summative timeline of key activities and meetings described above.

- Nov. 15-20, 2015 – MPA-UWC collaboration meeting (Gordons Bay)
  Discussed the latest theoretical efforts on the physical processes that remove and fuel galactic halos. Networked with experts from Max Planck Institute for Astrophysics including Profs. T. Naab, S. White, G. Kauffmann, and Prof. Davé's students. Gave contributed presentation.
- Nov. 23, 2015 – visited SKA South Africa Office (Cape Town)
  Gave UWC Astronomy Seminar (relocated owing to civic unrest on UWC campus), networked with SKA technical staff, and met potential QHIS collaborators. Established important contacts with Profs. Michelle Cluver

[10] http://www.saao.ac.za/
[11] https://www.salt.ac.za/
[12] http://cas.umkc.edu/hscp/bridge-to-the-stars.asp
[13] http://www.astro4dev.org/

and Mario Santos (UWC), and Prof. Russ Taylor (UWC-UCT joint; Director IDIA).

- Nov. 24, 2015 – visited SAAO (Cape Town)
  Met with staff astronomers to discuss various science projects related to my work including Dr. Ros Skelton. Participated in Prof. Davé's research group meeting in which his team discussed preliminary results from MUFASA simulation.
  Personal note: the grounds and original (main) building are beautiful and rich with history.
- Nov. 25, 2015 – initial visit to UWC (Bellville)
  Networked with various faculty and students in the Physics Department. Discussed ongoing efforts in the Astro Research Group with Profs. Davé, Cluver, Santos and their students. Discussed promoting science to African youth with Prof. Jarita Holbrook.
- Nov. 26, 2015 – visited SAAO
  Gave SAAO/UCT Joint Colloquium. Established important contacts with Prof. Sarah Blyth (UCT; Co-PI of LADUMA). Met Dr. David Gilbank and learned about his research with SALT and discussed possible future collaborations and a visit to SALT.
  Personal note: enjoyed a lovely Thanksgiving get-together at the home of Profs. Cluver and Jarrett.
- Nov. 27, 2015 – visited SAAO
  Established important contact with Dr. Eli Grant at the IAU OAD office. Attended a seminar on SALT large programs science. Joined Dr. Gilbank's research group discussion.
- Nov. 30 – visited UWC
  Met with Physics faculty and lecturers (Prof. M. Herbert, Honji Conana, Trevor Volkwyn, Rohan MacLons, and Masimba Paradza) to discuss science education ideas. Topics included the benefits of teaching concepts first, my Introductory Astronomy innovations, and successful strategies for improving reading/writing in advanced science courses.
- Dec. 1-4, 2015 – SKA Bursary Meeting (Stellenbosch)
  Attended dozens of presentations on the engineering and scientific objectives of the SKA and its precursor, MeerKAT. Networked with dozens of radio astronomers and research students from African universities. Discussed QHIS collaboration logistics and proposal with Profs. Davé, Cluver, Pisano, Blyth and Tom Jarrett (UCT). Met with IAU OAD education specialist Dr. Grant to followup our discussion regarding *A Bridge to the Stars* pipeline improvements. Met Prof. Andrew Baker (Rutgers; Co-PI of LADUMA).
  Personal note: it was wonderful to see so many young people of color engaged in the pursuit of science.
- Dec. 5, 2015 – VIP tour of South African Large Telescope (SALT) facility at the SAAO field station near Sutherland in the Northern Cape province. This world-class facility is the largest optical telescope in the southern hemisphere with a primary diameter of 11 meters. SALT is managed by SAAO and funded by a consortium of international partners include U.S. institutions. I learned about the engineering of the telescope and dome, the technical operations of the observatory, the external grounds, and the data acquisition management. I spent several hours in the control room during observations, and spent the night at the dorm.
  Personal note: the drive to SALT is spectacular. I made a point to take the long way back to Cape Town so that I could see the true most southern tip of Africa in L'Agulhas. It is far outshined by the dramatic Cape of Good Hope just south of Cape Town.
- Dec. 7, 2015 (am) – visited African Institute for Mathematical Sciences (AIMS, Cape Town)
  Discussed QHIS proposal with Prof. Davé. Unfortunately, Prof. Bassett's cosmology/data science group meeting was cancelled.
- Dec. 7, 2015 (pm) – visited UCT (Cape Town)
  Discussed science projects with Prof. Jarrett. Met with Prof. Blyth to discuss QHIS proposal.
- Dec. 8, 2015 (am) – visited SAAO (Cape Town)
  Participated in Prof. Davé's group meeting discussions about MUFASA simulation analysis. Discussed QHIS proposal and feasibility calculations.
- Dec. 8, 2015 (pm) – attended UWC Physics end of the year party in Stellenbosch
- Dec. 9, 2015 – visited UWC
  Gave education innovations seminar to the Physics Department. Met with Prof. Cluver to discuss QHIS proposal, and presented abbreviated version of my Nov. 26 talk to her and her students. Established important SKA contact with Prof. Roy Maartens (SKA/SARChI Professor in Astronomy & Astrophysics). Met with Leolyn Jackson (Director, International Relations) for debriefing of my UMSAEP-

sponsored visit.
Personal note: I enjoyed immensely my tour of the UWC grounds with Leolyn during which he gave me an insider's version of the historical Anti-Apartheid protests that occurred on the UWC campus.

6. Summary

My first experience with the UM-UWC exchange program has been very beneficial to my career during the 10 months since my short 4-week visit to Cape Town. Indeed, I would argue that my reflection now, nearly a year later, convinces me that the UMSAEP's impact on my professional development was much more significant than I would have thought just 1 or 2 months afterwards. Important to the proposed goal, the formal collaboration was established, all parties are interested in pursuing the ambitious QHIS project, and we made progress on the proposed objectives. Of course, giving 4 formal presentations and submitting 5 funding proposals directly related to ideas and discussions during my time in Cape Town are additional noteworthy metrics of success (listed in 7.1 and 7.2). Yet, foremost, it is the meeting of minds, both with known colleagues, but importantly with new scientific friends, and the collective brainstorm and sharing of ideas that is the cornerstone of this Linkage program. That's where the new ideas spring, and the seeds for new collaborations take root. In short, the UMSAEP should most definitely be continued. The modest investment in the cultivation of international partnerships and the inspiration of new ideas will always return great and unpredictable rewards!

Personal note: I extend particular thanks to my host, Romeel, for giving me a whirlwind tour of the many Cape Town astronomy institutions, and for introducing me to many new science friends. I had an amazing time!

7.1 Related Proposals

a. (Role: Co-I) "Kansas City Urban STEM Collaborative," preliminary proposal submitted to the National Science Foundation under NSF INCLUDES program, Apr. 13, 2016 for $150,00 over 2 years. Status: declined.
b. (Role: PI) ``A Bridge to the Stars: High School-to-College Pipeline to Increase Diversity in STEM," submitted to the American Honda Foundation, Aug. 1, 2016 for $67,984 over 1 year. Status: under review.
c. (Role: PI) ``Develop Summer Research Training Course to Expand Highly Successful A Bridge to the Stars Program," submitted for Affiliates Award Competition through NASA Missouri Space Grant Consortium to NASA under National Space Grant College and Fellowship Program, Sep. 12, 2016 for $9,990 over 1 year. Status: under review.
d. (Role: PI, subawardee) ``Augmentation to A Bridge to the Stars Recruitment Pipeline Program (FY2016)," submitted for Affiliate Augmentation Award through NASA Missouri Space Grant Consortium to NASA under National Space Grant College and Fellowship Program, Sep. 12, 2016 for $13,000 over 1 year. Status: under review.
e. (Role: PI) ``Shedding New Light on Why Galaxies Die with the World's Greatest Radio Observatory," submitted to UMKC under Funding for Excellence program, Sep. 16, 2016 for $14,999 over 1 year. Status: under review.
f. (Role: PI) "Mapping the HI Content of Massive SDSS Galaxies in Different Stages of Quenching," to be submitted March 2017 as part of the initial CFP for public science projects

7.2 Formal Presentations

a. *Massive Recently-Quenched Galaxies*, Nov. 18, 2015, MPA-UWC Collaboration Workshop, Gordon's Bay, South Africa
b. *Two Tests of the Modern Merger Hypothesis at z~0*, Nov. 23, 2015, University of Western Cape, Special Astronomy Colloquium, Cape Town, South Africa (**invited**)
c. *Galactic Capitalism: The Buildup of a Bimodal Galaxy Population*, Nov. 26, 2015, South African Astronomical Observatory, SAAO/UCT Joint Colloquium, Cape Town, South Africa (**invited**)
d. *Education Innovations*, Dec. 9, 2015, University of Western Cape, Special Physics Seminar, Cape Town, South Africa (**invited**)

8. References

Boselli et al. 2014, A&A, 564, A66
Catinella et al. 2013, MNRAS 436, 34

Davé et al. 2013, MNRAS, 434, 2645
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Fernandez et al. 2013, ApJ, 770, 29
Gabor & Davé 2012, MNRAS, 427, 1816
Keres et al. 2012, MNRAS, 425, 2027
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Veron-Cetty & Veron 2010, A&A, 518, A10
Yang et al. 2007, ApJ, 671, 153

NEWS IN BRIEF

Linkage Awards

The UMSAEP Committee convened in Columbia on August 31, 2016, and met via video conference with Ramesh Bharuthram from the Unviersity of the Western Cape to select particpants for the 2017 faculty exchange. The committee authorized UMSAEP awards to nine UWC faculty members and ten UM faculty members.

UWC faculty receiving UMSAEP Linkage awards (UM hosts in parentheses)

- Vivienne Bozalek (Candace Kuby, MU)
- Tapas Chatterjee (Francisca Oboh-Ikuenobe, Missouri S&T)
- Courtney Davids (Elizabeth Chang, MU)
- Lucia Knight (Enid Schatz, MU)
- Mervin Meyer (Kattesh Katti, MU)
- Martin Onani (Kattesh Katti, MU)
- Anita Padmanadbhanunni (Steven Bruce, UMSL)
- Kailash Patidar (Naveen Vaidya, UMKC)
- Shaheed Soeker (Jacquelyn Sample, MU)

UM faculty receiving UMSAEP Linkage awards (UWC hosts in parentheses):

- Wesley Bernskoetter (Salam Titinchi)
- Elizabeth Chang (Courtney Davids)
- Ty-Ron Douglas (Mandla Gagayi, Rouaan Maarman and Andrew Travill)
- Suchismita Guha (Chris Arendse, Theophillus Muller)
- Carsten Ullrich (Chris Arendse, Theophillus Muller, Dirk Knoesen)
- Aria Ahmed (Gail Hughes)
- Janis Ellis-Claypool (H. Boltman-Binkowski
- Lana Alagha (Leslie Petrik)
- Thomas Meuser (Thuli Mthembu andNicolette Roman)

UM faculty receiving an UMSAEP Partnership award (UWC hosts in parentheses):

- Laura Schopp (Red Cross in South Africa and Jose Franz, UWC)

UM and UWC Visitors

UM visitors to South Africa in 2016 include the following: Rodney Uphoff, Arif Ahmed, Barbara Bichelmeyer, Niyi Coker, Maria Fidalgo, William Folk, Michelle Foster, Greg Gelles, Scott Helm, Catherine Johnson, Letitia Johnson, Michael Kruger, Mary Leuci, Jim Levin, Wilson Majee, Michael

Marlo, Mark McIntosh, Paul Miceli, Julie Middleton, Mike Middleton, Francisca Oboh-Ikuenobe, Richard Oliver, Rob Paul, Lois Pierce, Linna Place, David Renz, Enid Schatz, Cheryl Schrader, Jim Scott, Robert Sharp, Randy Smith, Chris Spilling, Matthew Taylor, Klaus Woelk, Mike Wood, Kent Wray

UWC visitors in 2016 include the following: Tyrone Pretorius, Larry Pokpas, Ramesh Bharuthram, Premesh Lalu, Vivienne Lawack, Yusuf Osman, Jose Frantz, Anthea Rhoda, Michelle Andipatin, Charlene Africa, Nita Lawton-Misra, Karien Jooste, Chris Arendse, Alan Christoffels, Kobus Visser, Shaun Pather, Laurence Stephen, Mike Davies-Coleman, Lorna Holtman, Janine Chantson, Emmanuel Iwuoa, Yuyo Nomlomo, David Fisher, Kenechuku Obikeze, Chris Stroud, Bassey Antia, Ndiko Ludidi, Julian May, Yonatan Fessha, Michael Guilfoyle, Patricia Hayes, Roy Maartens, Chris Cobb, Maria Florence, Theophillus Muller, Keagan Pokpas, Nicole Sibuyi, Mulugeta Dinbabo, Karriem Abdulrazak, Rachel Fanelwa Ajayi, Mark Herbert, Ciraj Rassool, Marshall Keyster, Nikki Roman,

UM/UWC Faculty Visit Summary:

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
UM Faculty	4	6	7	14	11	12	10	11	11	7	9
UWC Faculty	4	10	11	18	17	25	10	13	13	7	8
Total	8	16	18	32	28	37	20	24	24	14	17

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
UM Faculty	13	14	9	7	4	7	7	7	9	22	7
UWC Faculty	2	7	3	5	6	6	4	4	10	1	9
Total	15	21	12	12	10	13	11	11	19	23	16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
UM Faculty	7	15	20	39	11	18	35	19	40	412
UWC Faculty	7	7	14	6	16	5	12	25	44	329
Total	14	22	34	45	27	23	47	44	84	741

Mitchell Scholarship Application Deadlines Announced

Jennifer Culver (UMSL) was the receipient of a Henry Mitchell Scholarships the past year. Selected for the upcoming year is Brianne Overton (UMSL), Lavona Johnson (UWC) and Janine Smith (UWC).

The UM application deadline for the Mitchell Scholarship for study at UWC for the fall 2017 semester is March 1, 2017. Classes start at UWC for the fall semester on August 7, 2017.

The application deadline for the winter 2017 semester is September 15, 2017.

An application form is available for downloading at
https://uminfopoint.umsystem.edu/media/aa/southafrica/pgmstudent/Henry_Mitchell_Scholarship_Application.pdf
A completed application should be sent to the international office on your campus.

Internet Resources on South Africa

- African Internet Connectivity: http://www3.sn.apc.org/africa
- African National Congress Home Page: http://www.anc.org.za
- The South Africa Initiative Office (U. of Michigan): http://www.umich.edu/~saioum
- Independent Online News: http://www.iol.co.za/
- UMSAEP: http://www.umsystem.edu/ums/departments/aa/southafrica
- The University of the Western Cape: http://www.uwc.ac.za