



Mr. Craig McKibben & Ms. Sarah Merner  
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October 24, 2016

Dear Craig and Sarah,

I hope this letter finds you in good health and great spirits. I would like to take a small amount of your time (again) to report on my recent work in research and training the next generation of mathematicians.

I have said before, but I don't know if I can say enough times, that I am extremely proud to have been the *McKibben and Merner Professor of Mathematics* for the last ten years and I continue to be proud of this achievement. Your generosity is a significant contributing factor helping me to continue working at an internationally recognized level and providing a first-class education to my graduate students.

Since my last letter most of my work has been focused on one particular problem. In fact, I have been thinking about this problem on and off for at least two years. I had made some progress earlier, but there was always a gap or a missing idea until recently.

This past summer I spent a lot of time concentrating on this particular problem. It is important to note that holding the McKibben and Merner Endowed Professorship helped make it possible for me to devote so much time to my research this summer. The good news is that this effort bore fruit. I believe I have solved the problem and now I am busy writing it up so I can announce the result to the mathematical community.

Let me explain what the problem is and what I have done.

As I have mentioned earlier, my research is in algebraic geometry, which is at the cross-roads of several disciplines. For instance, Andrew Wiles's proof of Fermat's Last Theorem used algebraic geometry in an important way and so did many other researchers working on problems in various fields.

A central issue in algebraic geometry is computing the *cohomology* of various spaces. Cohomology can be considered a measure of failure. For example, if we consider a circle on a plane and keep decreasing its radius, then as a limit we obtain a single point. We refer to this phenomenon as "contracting the circle (to a point)". However, not all circles on all surfaces can be contracted. For instance, if we "puncture" the plane, that is, omit a single point, then a circle that goes around the puncture cannot be contracted within the punctured plane. This gives us a way to distinguish the plane from the punctured plane;

this is detected by their cohomology. The relevant cohomology of the plane is trivial, representing the fact that on a plane there is no obstruction to contracting any circles, while the corresponding cohomology of the punctured plane is non-trivial, because the puncture provides an obstruction to contracting some circles. Thus, if we don't know much about these two spaces—only the above facts about their cohomology—we can still distinguish them. This is a standard way to use cohomology; it is an important tool in the classification of geometric objects.

Another important topic is that of singularities. I may have written about those before, because a lot of my work deals with singularities. This new result I am writing about involves both singularities and cohomology.

Let me recall that a singularity is a point on a geometric object which is different from most other points. For example, if you consider two intersecting lines, then small neighborhoods of any two points different from the intersection point of the two lines are similar: near those points the object looks like a single line going through a single point. Near the intersection point, regardless of how small a neighborhood we are considering, we will always see both of the lines. Accordingly, the intersection point is singular, while the other points are not.

*Rational singularities* form an important class of singularities. A geometric object with at worst rational singularities has the property that its cohomology behaves as if the object had no singularities at all. This means that the corresponding cohomology is somewhat easier to compute. For this reason, it is good to know if certain singularities are rational.

Another important class is that of *canonical singularities*. It is a little more difficult to say what makes a singularity canonical, but a naive description is that they are the typical singularities that appear on naturally defined objects.

In other words, canonical singularities are those we encounter often and rational singularities are those with which it is easier to work. Hence, it is important to know whether a canonical singularity is rational. This has been known in some cases since the early 1980s, due to the work of Renée Elkik, but has been an open problem in general ever since.


This is exactly the problem with which I have been preoccupied for the last two years, that is, proving that canonical singularities are rational. Actually, it turns out, canonical singularities are not always rational. There is an additional condition which plays a pivotal role. In the cases, for which Elkik proved the desired implication, this additional condition holds automatically, but it need not hold in general. What I have proven is exactly that canonical singularities that admit this additional condition are rational, and those without the condition are not rational. I have also constructed examples of canonical singularities without the condition. The existence of such a singularity had also been an open question until now. This implies that it is necessary to assume this additional condition and with it the desired statement follows.



I am very excited about this result and your generosity has provided essential help in achieving it.

I will be happy to answer any questions or explain anything you are interested in. I hope that I will see you at some university function or elsewhere, so that I can reiterate my appreciation in person.

Sincerely,



Sándor J Kovács  
McKibben and Merner Professor of Mathematics



*DEPARTMENT OF HISTORY  
UNIVERSITY OF WASHINGTON  
SEATTLE, WASHINGTON 98195  
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June 19, 2017

Mrs. Margaret Walker  
The Highlands  
131 Huckleberry Lane NW  
Seattle, WA 98177

Dear Mrs. Margaret Walker,

This is my second year of writing to you about the impact that your generous donation of funds for History Department Professorships has had on my academic life. The anniversary of the passing of your husband Douglas must have taken place a few months ago. I hope you take solace in knowing what a difference his and your generosity has made in the lives of so many people.

The Walker Family Endowed Professorship has again had an enormous impact on my scholarly work this past year and my ability to mentor my many graduate students. My graduate students come from many parts of the world to study with me because I am one of a small group of scholars who studies Indonesia, the world's fourth most densely populated country and the country with the largest number of people who are followers of Islam. The Islamic religion has come to have so many troublesome associations in the world today because of a very small percent of radical people who misinterpret the teachings of their religion. One of the many things that I try to do as a scholar of Indonesia is to humanize the image of the Islamic religion by teaching about its performing arts and literary traditions. One of the books that I have authored is devoted to the most important oral tradition in Java, the major island of the island nation of Indonesia. The shadow puppet theatre tradition has been practiced on the island of Java for over a thousand years. Although the shadow theatre tradition preceded the coming of Islam to Indonesia in the 14<sup>th</sup> and 15<sup>th</sup> centuries, the shadow theatre became an important vehicle for spreading the religion of Islam from the coastal areas of Java to the inland.

I myself acquired a collection of these beautiful shadow puppets as gifts and through purchases during the six years I have spent in Indonesia over the span of my career. I did my fieldwork in Java in the early 1980s, and I spent two years in the court city of Solo in central Java. I brought my daughter with me and we first spent 5 months in Holland, where I studied in the archives of the Dutch colonial period (1600-1942) when they ruled the Indies, as Indonesia was called then. My daughter was only six at that time and she attended a Montessori School in Leiden. Then, when we travelled to Java in mid-1982, my daughter went to an Indonesian school where she completed second and third grade. She speaks the Indonesian language fluently as I do, but she actually learned to perform with the shadow puppets rather than just study about them as I do. My daughter Tikka now works at the University of Washington as a co-Director of the Theatre for Change, but she formerly worked for many years as the Outreach Coordinator for the UW Southeast Asia Center. As part of her duties in that position, my daughter would travel around Seattle and the nearby islands performing the Javanese theatre tradition for many grade school children. She would do workshops for several days to teach about the puppets and the stories, and then there would be a performance to close the workshop. One of the things a good puppeteer learns to do is to listen carefully to the students and teachers and to learn about the local culture so that she can weave the stories of each grade school into the ancient stories of the Javanese shadow theatre. Both the children and their teachers love it when they see themselves and their school brought to life on the stage of the shadow theatre.

Because of my work on oral tradition, I have attracted graduate students from Indonesia, Singapore, South Korea, Canada, and many from all over the U.S. Since I received the Walker Family Endowed Professorship, my reputation has been enhanced and more students want to come to study with me than I can accept. But the Professorship also allows me to hire at least one student each summer to help me with my present research into modern Indonesian literature. I told you last year about my collaboration with an historian of Latin America on an edited volume about storytelling in island worlds. We have contributions on Island Southeast Asia, i.e. Indonesia, Malaysia, and the Philippines, as well as pieces on Sri Lanka, the Pacific Islands, Asian America, and Latin America. We were able to finish the job of editing all the contributions in summer and fall of 2016. Now our Collection is under scholarly review, and we hope it will be published as a Special Edition of the highly respected scholarly journal *Positions: Asian Cultures Critique*. We had to hire a copyeditor to help us prepare the manuscript, and my Walker Family Professorship enabled us to hire an excellent copyeditor who expertly prepared the entire manuscript for submission. I hope when I write to you next year, I can tell you that the Collection is going to be published. I will make

sure you get a copy of the Collection, even if you only want to skim through it, because it is through your generosity that this important collection has come to life.

This summer I will be working on a new collection of my own essays—some that have already been published but are out of print and some new ones that have not yet been published. I have most of the essays for this new book ready and only need to write a new Introduction that ties the pieces from different periods of my life together. All my writings do seem to be connected with storytelling since I published my first edited collection in 1984. I have published many edited volumes that bring together the work of friends and colleagues. It is something I love to do: to link various stories together, and I think that it is beneficial for other scholars and the broader community of readers. These two new edited collections will certainly mention the Walker Family Professorship in the acknowledgements since the Professorship has been so crucial in making my work possible.

I wish to thank you again for enriching my life this year as well as my scholarly career. I hope the coming year will bring many rewards as well.

Sincerely,

A handwritten signature in blue ink, appearing to read "L. Sears", with a stylized flourish at the end.

Laurie J. Sears, *Walker Family Endowed Professor*  
Department of History  
University of Washington

Ann Nelson  
Professor of Physics  
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University of Washington  
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26 August 2015

Ms. Christopher E. Young  
1968 26th Avenue East  
Seattle, WA 98112-3016

Dear Ms. Young,

I wish to thank you again for the Kenneth K. Young Memorial Endowed Chair. My students who were in part supported by the chair, Seyda Ipek and Bridget Bertoni, both received their doctorates this summer and received multiple prestigious postdoctoral offers. Bridget is going to be a postdoctoral fellow at Stanford University and Seyda will be a postdoctoral fellow at the Fermi National Laboratory in Batavia Illinois.

Some new exciting research developments in the past year: with Bridget and Seyda I proposed that "the dark matter small scale structure problem" could be solved by a sizable nongravitational interaction between dark matter and neutrinos. The problem is that simulations of galaxy formation predict hundreds of times more dwarf satellite galaxies of the Milky Way than have been observed. It is possible that the small galaxies are there but do not form stars. In our theory, an interaction with the cosmological neutrinos prevents the dark matter from collapsing under the effects of gravity and forming small galaxies. We predict that future neutrino experiments which study how neutrinos change from one type to another could see non standard effects, and that the energy spectrum of neutrinos from supernovae could be affected. On another front, Bridget analyzed data from the Fermi gamma ray telescope and made an exciting discovery of candidate "dark matter only" dwarf galaxies, which are emitting gamma rays which could possibly be from dark matter annihilation into ordinary particles.

My current student Akshay Ghalsasi will be supported in the coming year and will graduate. He and I have just finished a paper on a new theory of why the universe is made of matter rather than being composed of equal amounts of matter and anti-matter.

I very much enjoy working with graduate students and am grateful for the opportunity to support them via the Kenneth K. Young Memorial Endowed Chair. I have been able to find talented students who are successful in research and career.

Best wishes to you and your family.

Sincerely,

Ann Nelson  
Professor of Physics



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26 August 2015

Drs. Wylie G. Burke and Frank J. Baron  
6140 East Mercer Way  
Mercer Island, WA 98040-5128

Dear Drs. Burke and Baron,

I wish to thank you again for the Kenneth K. Young Memorial Endowed Chair. My students who were in part supported by the chair, Seyda Ipek and Bridget Bertoni, both received their doctorates this summer and received multiple prestigious postdoctoral offers. Bridget is going to be a postdoctoral fellow at Stanford University and Seyda will be a postdoctoral fellow at the Fermi National Laboratory in Batavia Illinois.

Some new exciting research developments in the past year: with Bridget and Seyda I proposed that "the dark matter small scale structure problem" could be solved by a sizable nongravitational interaction between dark matter and neutrinos. The problem is that simulations of galaxy formation predict hundreds of times more dwarf satellite galaxies of the Milky Way than have been observed. It is possible that the small galaxies are there but do not form stars. In our theory, an interaction with the cosmological neutrinos prevents the dark matter from collapsing under the effects of gravity and forming small galaxies. We predict that future neutrino experiments which study how neutrinos change from one type to another could see non standard effects, and that the energy spectrum of neutrinos from supernovae could be affected. On another front, Bridget analyzed data from the Fermi gamma ray telescope and made an exciting discovery of candidate "dark matter only" dwarf galaxies, which are emitting gamma rays which could possibly be from dark matter annihilation into ordinary particles.

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Best wishes to you and your family.

Sincerely,

Ann Nelson  
Professor of Physics

# SCHOOL OF ART + ART HISTORY + DESIGN

UNIVERSITY of WASHINGTON

Dear Mr. and Mrs. Herbert L. Pruzan,  
5, 2017

June

This report summarizes the impact that the Jack and Grace Pruzan Endowed Faculty Fellowship has had on my faculty research this past year, 2016-17. I would like to mention at the outset, that the distinction and privilege of having been selected for the fellowship means a great deal to me. For several years, complex personal issues kept me from an intensive studio life and my role at the UW could be described as “lackluster”. I’m grateful that this award signals a shared confidence in my renewed focus and direction in my position at the UW SoA+AH+D.

Largely, the funds that accompany this fellowship have made it possible for me to make decisions in the studio- liberal decisions- that would otherwise be impossible. For example, instead of clumsily, ineffectively photographing my work with a borrowed camera, I was able to afford a photographer to shoot large images for my interview in SCULPTURE magazine; well worth it. But then, I realized that, in the long run, it would be more economical for me to purchase a quality camera (I did) and gradually learn something (or a lot) about photography myself.

Recently, experimenting with clay, sculpture, and photography has been of interest to me, so the funds not only allowed me logistical freedom, but more importantly, a new vehicle/tool to add to my creative process.

Likewise, instead of dedicating MY studio time to constructing basic carpentry elements, i.e., pedestals and crates, I was finally able to delegate these rudimentary tasks to better qualified woodworkers whose craftsmanship is exponentially better than mine.

Similarly, the fellowship funds allowed me to experiment with the notion of sound in my recent exhibition, “**body**” at William Traver Gallery by making possible the purchase of mini MP3 speakers and micro chips. For me to decide to take a risk on a new idea without hesitation regarding its cost was a liberty that I’ve honestly *never* experienced as an artist.

Most significantly, the fellowship funds were an essential asset to the freedom of mind to explore my very first (long awaited) sabbatical, not merely as “leave”, but rather as “journey”. Literally, this “journey” began with a cross-country drive to Zanesville, Ohio, my studio destination from mid-August to Early December. I’d never had the liberty to “hit the road” for the express purpose of exploration or

without a very restricted budget. My explorations were far from casual wanderings, however, as I had a distinct mission to visit *two* specific “Garden of Eden(s)”- two sites that I’d longed to experience since I began my life as an artist. For as long as I can recall, I’ve sensed that a lingering “internal, prevenient understanding” of my inclination toward clay would be *revealed* through the masterful, red hued geologic phenomena of the high deserts of Utah, notably at Arches National Park and there, specifically, by the “Garden of Eden” formation/cluster. And, as preordained, it was sublime. I came away with a new haptic vocabulary that’s clearly evident in my recent **“body”** exhibition at Traver Gallery. Suffice to say, the varied chromatic range of terra cotta heads was impacted by the geology I encountered and “absorbed”. I could go on detailing the impact of the experience forever.

S.P. Dinsmoor’s **“Garden of Eden”**, an “outsider artist” site at his home in Lucas, Kansas was among the very first images of *any* artwork shown to me in undergraduate school. In fact, the same lecture (by Tom Rippon, my first clay mentor) that introduced S. P. Dinsmoor on my first day in class, covered *Outsider Art*, the *Ceramic Funk Art* movement, and the Chicago Imagist painters aka *The Hairy Who*. The amazing directness of S.P. Dinsmoor’s purposeful, monumental vision, robust materiality, and spirited modelling has always been a fundamental piece of my sculptural DNA.

Dinsmoor’s extravagant **“Garden of Eden”** was his home- he built a mausoleum that houses his corpse to view in “state” on the property. The rural drive approaching Lucas, KS felt like a pilgrimage. Unexpectedly, the epic “ordinariness” of the town of Lucas, itself, becomes transcendently monumental- inseparably coexisting with Dinsmoor’s creative, visionary feat, leaving one simultaneously humbled and transfigured. There was no way to predict this seemingly COSMIC paradox and I’m grateful to have been able to experience such a thing.

The Pioneer School in Zanesville, Ohio is a 30,000 square foot vacant elementary school perched atop the town of Zanesville, on the Appalachian fringe of Ohio. I lived and worked in studio there alone, in precious solitude, for four months. In 2015, I was a juror for the Zanesville Prize for Contemporary Ceramics, an international juried exhibition with a \$20,000 grand prize- the largest for ceramics in the Western Hemisphere. During my visit for the exhibition opening and events, I toured the Pioneer School and was told that they had intentions to establish a ceramic residency program there. The timing with my sabbatical and provision of the fellowship allowed me to volunteer to do a “prototype residency”, begin to establish a programming board, and participate in future vision of PSZCC (Pioneer School Zanesville Ceramic Center).

And here, I could go on describing the impact of four uninterrupted months of studio existence, but somehow, to detail four months of intense, monastic solitude would betray the immutability of the experience.

With the funds from this fellowship, I was able to be unencumbered to liberally purchase clay and other materials in Ohio's "clay belt" and could travel freely around the region to contact peers in the ceramic field, visit significant sites, and then... buy a trailer hitch to pull a trailer full of new work back across a frozen America, over the Cascades and back to Seattle.

Stated simply, the Jack and Grace Pruzan Endowed Faculty Fellowship has significantly rejuvenated my personal disposition at the UW.  
Stated comprehensively, this fellowship is vital in reviving the artist I *should* become.

With Gratitude and Respect,

**Doug Jeck**  
**Associate Professor, 3D4M Program**  
**SoA+AH+D**  
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