NEW MEXICO STATE UNIVERSITY BOARD OF REGENTS
SPECIAL MEETING
April 6, 2018 at 9:00am
Regents Room of the Educational Services Building, Las Cruces Campus
1780 East University Avenue, Las Cruces, New Mexico

Regents of New Mexico State University
Chair Debra Hicks, Vice Chair Kari Mitchell, Secretary/Treasurer Jerean Hutchinson, Chris Saucedo, Margie Vela
Non-Voting Advisory Members - Faculty Senate Chair Christopher Brown, Ph.D.,
Employee Council Chair Adam Cavotta, ASNMSU President Kevin Prieto
University Officials - Chancellor Garrey Carruthers, Ph.D., Executive Vice President and Provost Daniel Howard, Ph.D., Senior Vice President Andrew Burke, Ed.D., Associate General Counsel Lisa Warren, J.D.

AGENDA
The Board of Regents meeting will be available by webcast through the link at http://panopto.nmsu.edu/bor/

A. Call to Order, Chair Debra Hicks
   1. Introductions - Introduction of the Media, Associate Vice President Justin Bannister
   2. Confirmation of Quorum, Chair Debra Hicks
   3. Approval of the Agenda, Chair Debra Hicks
   4. Public Comment, Associate Vice President Justin Bannister

B. Approval of the Minutes, Chair Debra Hicks
   1. Special Work Session Meeting of March 6, 2018
   2. Regular Meeting of March 6, 2018
   3. Confirmation of Prior Executive Session of March 28, 2018
   4. Confirmation of Prior Executive Session of April 2-3, 2018

C. Consent Items, Chair Debra Hicks
   1. Solar Lease Agreement with EDP-ibvogt LLC, Chihuahuan Desert Rangeland Research Center (CDRRC), Special Assistant to the President Scott Eschenbrenner
   2. Gardiner Hall 229 Naming of Gale A. Harvey Physics Classroom, VP Andrea Tawney, Ph.D.
   3. ECIII Foreman Complex Naming of Suite 300 – Learning Communities, VP Andrea Tawney, Ph.D.
   4. Renovation of NMSU-Carlsbad Chemistry Lab Room 230, AVP Glen Haubold, Heather Watenpaugh
   5. Honorary Posthumous Degree, Department Chair Christopher Brown, Ph.D.

D. Informational Items, Chair Debra Hicks
   1. Update on Advising, Holds, Freshman Experience, Meta Majors, Predictive Analytics and Freshman Experience Courses, Provost Daniel Howard, Ph.D., Director Jennifer Hodges, Ph.D., AVP Tony Marin, Ph.D.
   2. Chancellor Search Committee Update, Chair Debra Hicks
E. **Action Items, Chair Debra Hicks**

1. Tuition and Fee Rates and Budget Guidelines for FY2018-2019, VP Andrew Burke, Ed.D.
3. Professional Masters in Computational Data Analytics (PMCDA), Provost Daniel Howard, Ph.D
4. Addendum to Chancellor Search Firm Contract, Chair Debra Hicks, Vice Chair Kari Mitchell

F. **Announcements, Chair Debra Hicks**

1. “Gun’s Up” – Good News for NMSU!
2. Upcoming Board of Regents Meetings
   Regular Meeting - Friday, May 11, 2018 @ 9:00am

G. **Adjournment, Chair Debra Hicks**
Consent Items:

**Agenda Item # C-1**  
Solar Lease Agreement – Chihuahuan Desert Rangeland Research Center (CDRRC)  
**Presented by:** Scott Eschenbrenner, Special Assistant to the President  
**Requested Action:** Approval of Letter of Intent for an Option to Lease Agreement with EDP-ibvogt LLC  
**Synopsis:** EDP-ibvogt Solar LLC is presenting a Letter of Intent (LOI) for approximately 1,667 acres on the CDRRC. The Board of Regents Real Estate Committee has voted to recommend approval of this LOI for an Option to Lease Agreement to the Board of Regents. At December 8, 2017, Board of Regents meeting, this item was presented as information.

**Agenda Item # C-2**  
Gardiner Hall, Room 229 Naming  
**Presented by:** Vice President Andrea Tawney, Ph.D.  
**Requested Action:** Approval to Name room 229 in Gardiner Hall as the *Gale A. Harvey Physics Classroom*  
**Synopsis:** The Department of Physics requests to name room 229 in Gardiner Hall after one of their most distinguished alumni and donors, Mr. Gale Harvey.

**Agenda Item # C-3**  
Spaces in the EC III Foreman Complex – Suite 300 Namings  
**Presented by:** Vice President Andrea Tawney, Ph.D.  
**Requested Action:** Approval to Name Spaces in the EC III Foreman Complex – Suite 300 – Learning Communities  
**Synopsis:** Naming requests as presented and approved by Naming Committee and University Administrative Council for suite 300, conference room, room 331, room 341, room 346, room 337 and 339, room 348, room 335, room 344, and room 362.
Consent Items:

Agenda Item # _C-4_ NMSU-Carlsbad Chemistry Lab Room 230
Presented by: Associate Vice President Glen Haubold; University Architect Heather Watenpaugh
Requested Action: Approval of renovation of NMSU-Carlsbad Chemistry Lab Room 230
Synopsis: The improved Chemistry Lab Room will include a modern, safe, and versatile educational wet-laboratory for students.

Action Items:

Agenda Item # _E-1_ Tuition and Fee Rates and Budget Guidelines for FY2018-2019
Presented by: Senior Vice President Andrew J. Burke
Requested Action: Administration recommends approval of the Tuition and Fee Rates and Budget Guidelines for FY2018-2019.
Synopsis: In line with the annual budget development process, Administration will present recommended FY2018-2019 tuition and fee rates plus Sources/Uses for each NMSU campus.

Agenda Item # _E-2_ Parking Rates for FY2018-2019
Presented by: Senior Vice President Andrew J. Burke
Synopsis: In line with the annual budget development process, Administration will present recommended FY2018-2019 Parking rates.
Consent Items:

Agenda Item # C-5  Honorary Posthumous Degree
Presented by: Provost Daniel Howard
Requested Action: Motion to approve awarding of a posthumous master’s degree to Kristopher Burke and a posthumous doctoral degree to Eugene A. Benton
Synopsis: Mr. Burke died unexpectedly this semester and had completed about 90% of the work required for a master’s degree in Geology. His family supports this request. Mr. Benton died in May of 2017 having completed all requirements for a doctoral degree from the Department of Curriculum and Instruction except his doctoral defense. Mr. Benton’s award is supported by family members.

Informational Items:

Agenda Item # D-1  Update from Center for Academic Advising and Student Support, plus Student Engagement
Presented by: Provost Daniel Howard, Director Jennifer Hodges, and AVP Tony Marin
Requested Action: None
Synopsis: Per request by the Board of Regents, this informational item will update on Advising, Holds, Freshman Experience, Meta Majors, Predictive Analytics, and Freshman Experience Courses.

Action Items:

Agenda Item # E-3  Master’s Degree in Computations Data Analytics
Presented by: Provost Howard and Deans Hoffman, Pontelli, Reddi and Reyes
Requested Action: Motion to approve proposal for a professional master’s degree program in Computational Data Analytics
Synopsis: The proposed Professional Master Computational Data Analytics (PMCDA) program is designed for students interested in developing expertise in data analytics, with specialization in computational analytics. Data analytics is an inherently interdisciplinary discipline, dealing with methods and systems to synthesize knowledge or insights from large quantities of data collected from heterogeneous sources and diverse spatial and time scales. Data analytics employs theories, methodologies, and tools drawn from many fields, within the broad areas of mathematics, statistics, and computer and information sciences, and applies them to a diversity of data-rich domains, such as life sciences, medicine, physical sciences, social sciences, engineering, business, and education. The proposed program will meet workforce needs based on our investigation and interviews of employers in local corporations (e.g., through the Borderplex Alliance) and national laboratories (e.g., Los
Alamos, Sandia). The need for the program was also derived from extensive conversations with graduating students. The curricula was developed by a working group of faculty members from Computer Science, Applied Statistics, Mathematical Sciences, Industrial Engineering, and Electrical and Computer Engineering.

**Executive Session Items:**

None
Action Items:

Agenda Item # _E-4_   Addendum to Chancellor Search Firm Contract  
Presented by:   Debra Hicks, Chair, Board of Regents

Requested Action:
Approval of an amendment to the executive search contract increasing the maximum direct expenditure to $50,000.

Synopsis:
This amendment would extend the direct expenditure maximum of the Wheless Partners contract to $50,000.
Items B-3 and B-4

Confirmation of Prior Executive Session – March 28, 2018

The Board of Regents met in closed executive session at 12:00pm on Wednesday, March 28, 2018 at the NMSU Golf Course Meeting Room, 3000 Herb Wimberly Drive, Las Cruces Campus, Las Cruces, New Mexico to discuss limited personnel matters, pending or threatened litigation, and the purchase, acquisition or disposal of real property or water rights in accordance with the provisions of the New Mexico Open Meetings Act.

Those Board members who were present please certify that only matters of that nature were discussed.

Regent Hicks Regent Hutchinson Regent Mitchell Regent Saucedo Regent Vela

Confirmation of Prior Executive Session – April 2-3, 2018

The Board of Regents met in closed executive session from 8:00am to 5:00pm on Monday, April 2, 2018 and Tuesday, April 3, 2018 in Corbett Center Room 204 I, 1600 International Mall, NMSU Las Cruces Campus, Las Cruces, New Mexico and from 5:30-9:30pm Tuesday evening, April 3, 2018 at Hacienda de Mesilla, 1891 Avenida de Mesilla, Mesilla, NM over dinner to discuss limited personnel matters relating to chancellor search preliminary interviews in accordance with the provisions of the New Mexico Open Meetings Act and NMSA 1978, Section 21-1-16.1 (2011).

Those Board members who were present please certify that only matters of that nature were discussed.

Regent Hicks Regent Hutchinson Regent Mitchell Regent Saucedo Regent Vela
Agenda Item: Solar Lease Agreement – Chihuahuan Desert Rangeland Research Center (CDRRC)

Requested Action of the Board of Regents: Approval Letter of Intent for an Option to Lease Agreement with EDP-ibvogt LLC

Executive Summary: EDP-ibvogt LLC, a solar engineering, procurement and construction company that builds solar projects around the world, is responding to an RFP from El Paso Electric Company. As part of the RFP process, EDP-ibvogt will have to enter into a letter of intent (LOI) with NMSU for approximately 1,667 acres on the CDRRC. This does not create a binding lease but instead gives an exclusive negotiating period to analyze the suitability of the land for the project, negotiate the terms of the ground lease and most importantly allows the company to file for interconnection to the grid to ensure local power lines can support the project. If these things occur, then the parties can enter into an option agreement for the land, generally for three years. The Board of Regents Real Estate Committee has voted to recommend approval of this LOI for an Option to Lease Agreement to the Board of Regents.

References:
Please refer to attached Letter of Intent for an Option to Lease Agreement
Location Maps

Prior Approvals:
December 8, 2017 – Presented to the Board of Regents as an information item
March 28, 2018 – Board of Regents Real Estate Committee – Recommended approval of Letter of Intent for an Option to Lease Agreement

Agenda Item Approved By:

Scott Eschenbrenner
Special Assistant to the President

Garrey Carruthers, Ph.D.
Chancellor
**Signature Authorization Form**  
*Real Estate Approval Form*

<table>
<thead>
<tr>
<th>Date: 3/29/2018</th>
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<tbody>
<tr>
<td>Organization: Real Estate and Water Development</td>
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<tr>
<td>Submitted by: Clay Bradley</td>
</tr>
<tr>
<td>Summary of Approval Form:</td>
</tr>
</tbody>
</table>

Approval of the EDP-ibvogt LLC Letter of Intent for an Option to Lease Agreement.

<table>
<thead>
<tr>
<th>Approved By:</th>
<th>Date of Approval</th>
<th>Comments:</th>
</tr>
</thead>
</table>
| **University General Counsel**  
*Signature:*  
Lizbeth G. Ellis | Date Approved: 3/29/2018 | 3/29/2018 |
Letter of Intent for Solar Lease Agreement  
("Term Sheet")

<table>
<thead>
<tr>
<th>Parties and Purpose</th>
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</table>
|                     | 1. **Regents of New Mexico State University** ("the Owner")  
|                     | 2. **EDP-ibvogt Solar LLC**, ("the Company");  

The Owner and the Company are hereafter each referred to as "Party" and jointly referred to as "the Parties".

This Letter of Intent forms the framework for negotiations between the parties to identify and achieve the stated Purpose. This Letter of Intent is non-binding and does not impose any legal or financial obligations or liabilities on either party.

Owner and Company are acknowledging continued negotiations for the lease of a parcel of Owner’s property on the Chihuahuan Desert Rangeland Research Center to the East side of I-25, with an approximate acreage ranging from 1,000 to 2,000 acres, for the sole purpose of developing, constructing and operating a solar photovoltaic project (the "Project").

Following recent discussions, the purpose of the Term Sheet is to set out principal terms which the Parties have under consideration as part of an anticipated Option to Lease and Lease Agreement for the Property described above (the "Purpose").

<table>
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<tr>
<th>Definitive Agreements</th>
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|                       | The Parties intend to negotiate in good faith with the goal of executing a binding lease option agreement (the "Option Agreement") to be executed by the Parties at the earlier of (i) the written confirmation by El Paso Electric that the Company will be awarded a solar PPA for the Project on the Property, or (ii) December 31, 2019, 23:59 pm (GMT-6) (the "Option Deadline Date"). The right to exercise the option shall expire on December 31, 2022, 23:59 pm (GMT-6) if not exercised in the method described below by that date (the "Option Period").  

In the event the Parties successfully negotiate the final terms of and execute an Option Agreement on or before the Option Deadline Date, the Option Agreement will include an agreed upon but unsigned Solar Lease Agreement (the "Lease Agreement"), to be executed by the Parties upon exercise of the option by the Company.

The Option granted may be exercised by the Company during the Option Period at its sole discretion by delivery of (1) notification of its intent to exercise the option to Owner, (2) the Lease Agreement (in the form previously agreed upon), signed by an authorized agent of Company, and (3) a cashier's check or electronic delivery of the first annual leasehold payment. Owner shall return a copy of the fully executed Lease within two weeks after receiving the three items.

The Option Agreement and attached form of Lease Agreement will be considered the "Definitive Agreement" and will contain customary representations and warranties, including but not limited to, step in rights of Company's financing institutions for the Project in the case of breach of contract by Company.

<table>
<thead>
<tr>
<th>Lease Initial Term and Extension Term</th>
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|                                       | The Parties agree that the Lease Agreement will include an initial term of 25-years for the operation of the Project between the Company and El Paso Electric (jointly the "Initial Term"); and that it will include an option, exercisable by the Company in its sole
discretion, to extend the Initial Term by up to 2 additional periods of 5 years ("Extension Term").

Payment

The Company will remit the first agreed upon annual option payment (for the balance of that calendar year) upon execution of the Option Agreement, and thereafter annual option fees will be paid on or before January 10 of each subsequent calendar year during the Option period. If the Company exercises the Option, the Company will remit the first annual leasehold payment with delivery of its Notification of Intent to exercise the Option, and thereafter, annual leasehold payments will be paid on or before January 10 of each subsequent calendar year during each remaining years of the lease term.

Term Sheet Payment

The Company acknowledges a one-time good-faith payment of $5,000.00 to the Owner to execute the Term Sheet. Such payment will be made within ten (10) business days of execution of the Term Sheet and will not be refunded by Owner should the Parties be unable to move forward on execution of a Definitive Agreement.

Description of Payments under the Definitive Agreements:

During any agreed upon Option Period, the Company shall pay to the Owner, in consideration of the Owner’s commitment to exclusively reserve the Property for the purpose of the Lease Agreement with the Company, the following sums:

<table>
<thead>
<tr>
<th>Development Year</th>
<th>Total Amount</th>
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<tbody>
<tr>
<td>Year 1</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>Year 2</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>Year 3</td>
<td>$40,000.00</td>
</tr>
<tr>
<td>Year 4</td>
<td>$50,000.00</td>
</tr>
</tbody>
</table>

If Company should exercise the Option, then during the Initial Term through the two (2) Extension Terms of the Lease Agreement, the Company shall pay annual rent to the Owner under the Lease Agreement as follows:

<table>
<thead>
<tr>
<th>Lease Years</th>
<th>Annual Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>For each calendar year, including any partial calendar year in which the Option is exercised, and through the two Extension Terms.</td>
<td>$500 per acre Increased by ten percent (10%) on every fifth (5th) anniversary of the Lease Agreement.</td>
</tr>
</tbody>
</table>

Usage of Property prior to the Lease effective date:

Up to the effective start date of the Lease Agreement, the Owner shall have the right to maintain the current usage and purpose of the Property, while the Company shall have the right to access the Property to perform site studies on the Property for the purpose of developing the Project, such as, but not limited to, surveying, environmental, cultural, biological, hydrological, topographic, geotechnical, soil corrosively and resistivity, solar irradiation and other analyses. The Company’s activities during the Option Period shall not interfere with Owners use of the Property, nor cause any damage or diminution in value.

Usage of Property

Company’s use of the subject property will be limited to the Project. No other uses will be allowed.
| Property Taxes: | The Owner will be liable for the payment of the property taxes, as applicable for the Lease Property with current usage and the existing Property improvements as of the effective date of the Lease Agreement. Company will be liable for any incremental taxes assessed by any applicable taxing authority due to the improvements of the Project, including the ad valorem property taxes for the Project. |
| Decommissioning | The Company represents and warrants that at the end of the Lease Agreement, the Company will decommission and dismantle the entire Project at its own expense and reasonably restore the Property to its original state. The Lease Agreement will provide reasonable assurances that this commitment will be fulfilled. |
| Assignment: | The Company shall have the right to assign the Term Sheet or the Option Agreement to an affiliated entity of the Company. |
| Representations: | The Owner represents that as part of the negotiation of the Definitive Agreement, and based on current knowledge, the liens and/or other encumbrances, if any, existing on the Property will be disclosed to the Company, and Owner will not encumber or create any additional cloud on the Property prior to effective start date of the Lease Agreement; and In the event that any condition proves to be less favorable than as represented in this Term Sheet, the Parties agree to meet and negotiate in good faith to resolve the discrepancy and value associated with it. |
| Termination: | This Term Sheet shall terminate upon the earlier of: (i) the execution of a Definitive Agreement, or (ii) mutual agreement of the parties evidenced by a signed writing. |
| Governing Law and Jurisdiction: | This Term Sheet and any resulting binding agreements shall be governed by the laws of the State of New Mexico without the regard to conflict of law provisions thereof. The Parties irrevocably and unconditionally agree that any and all actions, suits, or other legal proceedings shall be brought only in a state or federal court located in New Mexico and consent to the exclusive jurisdiction of such courts in such legal proceedings. |

New Mexico State University

EDP-Ib Vogt Solar LLC

By: Garrey Carruthers  
Chancellor

By: Carl von Braun  
CEO & President
Board of Regents Meeting  
Meeting Date: April 6, 2018  
Agenda Item Cover Page

Presented By: Vice President Andrea Tawney, Ph.D.

□ Action Item  
☒ Consent Item  
□ Informational Item

Agenda Item: Gardiner Hall, Room 229 Naming

Requested Action of the Board of Regents: Approval to Name Room 229 in Gardiner Hall as the Gale A. Harvey Physics Classroom.

Executive Summary: The Department of Physics requests to name room 229 in Gardiner Hall after one of their most distinguished alumni and donors, Mr. Gale Harvey. Mr. Harvey has taken a strong interest in the undergraduate education of our physics majors and has established a sizable endowment for undergraduate scholarships.

References: Memo attached

Prior Approvals: Approved by Naming Committee and University Administrative Council (UAC) on March 13, 2018.

Agenda Item Approved By:

Andrea Tawney, Ph.D.  
Vice President

April 3, 2018  
Date

Garrey Carruthers, Ph.D.  
Chancellor

April 3, 2018  
Date
To: Dr. Enrico Pontelli, Dean, College of Arts and Sciences
CC: Patrick Knapp
RE: Naming of GN 229 classroom (Gardiner Hall)

The Department of Physics proposes to name the classroom GN 229 in Gardiner Hall after one of our most distinguished alumni and donors, Mr. Gale Harvey.

We propose to name this room the “Gale A. Harvey Physics Classroom”.

Mr. Gale Harvey attended New Mexico State University over 50 years ago, earning a Bachelor’s degree in Physics in 1962. He also earned a Master's degree in Physics from Virginia Polytechnic Institute and State University. Mr. Harvey has had a lifelong connection to the Physics Department in the College of Arts and Sciences and he showed his appreciation by establishing a significant endowed scholarship in 2007 for Physics students with financial need. Mr. Harvey had a 42-year career with NASA Langley Research Center in Hampton, Virginia where he worked on intercontinental ballistic missile reentries, atmospheric research lasers, and the space shuttle thermal protection system. He also worked with meteor astronomy and directed the NMSU Meteor Spectra Patrol in the 1970s. Since retiring, Gale has applied his science background in new ways as he became a full-time beekeeper. He uses thermal analysis to alleviate heat stress on the bees.

Mr. Harvey has taken a strong interest in the undergraduate education of our physics majors and has established a sizeable endowment for undergraduate scholarships.

The Department of Physics will cover the cost of naming (primarily a plaque to be placed in the classroom) from departmental funds.
Board of Regents Meeting
Meeting Date: April 6, 2018
Agenda Item Cover Page

Presented By: Vice President Andrea Tawney, Ph.D.

☐ Action Item
☑ Consent Item
☐ Informational Item

Agenda Item: Spaces in the EC III Foreman Complex – Suite 300 Namings

Requested Action of the Board of Regents: Approval to Name Spaces in the EC III Foreman Complex – Suite 300 – Learning Communities.

Executive Summary: Naming requests as presented and approved by Naming Committee and University Administrative Council:
   a. Request to name Suite 300 as the Eloy Torrez Family Learning Communities in Engineering
   b. Request to name room 331 as Richard and Cynthia Leza
   c. Request to name the conference room as the Dr. George W. Lucky Conference Room
   d. Request to name room 341 as Chris and Linda Long
   e. Request to name room 346 as TRAX International LLC
   f. Request to name rooms 337 and 339 as Mechanical and Aerospace Engineering Academy
   g. Request to name room 348 as Halliburton
   h. Request to name room 335 as Art and Dianna Hurtado
   i. Request to name room 344 as Mechanical Engineering Class of 1968
   j. Request to name room 362 as the Randolph Rothschild Dean’s Advisory Council Chair

References: Memo attached

Prior Approvals: Approved by Naming Committee and University Administrative Council (UAC) on March 13, 2018.

Agenda Item Approved By:

Andrea Tawney, Ph.D.
Vice President

Garrey Carruthers, Ph.D.
Chancellor

April 3, 2018
Date
MEMORANDUM

Date: February 13, 2018

To: Andrea S. Tawney, Vice President for University Advancement

From: Lakshmi Reddi, Dean, NMSU College of Engineering

Subject: Request for Review of Naming Opportunities in EC III Foreman Complex, Learning Communities in Engineering Suite 300, various sizes and namings

We request consideration of the following proposed naming opportunities located within EC III Foreman Complex, Learning Communities in Engineering Suite 300:

- **Eloy J. Torrez:** Although Eloy Torrez has lived outside of New Mexico since he graduated from NMSU with a Bachelor of Science in electrical engineering in 1970, he is still deeply connected to the university. While working at Hughes Aircraft, he recruited Hispanic engineers from New Mexico, particularly NMSU, which kept him connected to his college and professors. Throughout the years, his involvement with the university has continued to grow. He has served on the Engineering Dean’s Advisory Board and as president of NMSU’s Klipsch School of Electrical and Computer Engineering Academy. In addition to his generous contributions to the Society of Women Engineers and the Dean’s Fund for Excellence, Eloy has endowed a scholarship in memory of his parents, Eloy Torrez and Savina Salcido. Most recently, Eloy was the 2017 Distinguished Alumni for the College of Engineering, and he signed a transformative pledge agreement for $315,000 for facility renovations for the College’s new mentoring/tutoring center. In honor of this investment, which meets the threshold for naming, we are requesting to name the overall center (ECIII Suite 300) “Eloy Torrez Family Learning Communities in Engineering”. Signage will be provided in the lobby of EC III, and above the Suite 300 entrance.

- **Richard and Cynthia Leza:** Richard Leza is a 1973 Civil Engineering alumnus. Richard and his wife Cynthia believe in supporting Aggies Students, and first started giving back to NMSU students in 1985. The highlight of Mr. Leza’s corporate board career was being named to the “Top 100 Elite Board of Directors” by The National Association of Corporate Directors in 2015. Mr. Leza has served on the SEC Advisory Committee on Small and Emerging Companies, a board member of the Stanford Graduate School of Business Advisory Council, and an Emeriti Director of the New Mexico State University Foundation Board. He was also on the Board of Integrated Memory Logic Ltd., a company that was listed on the Taiwan Stock Exchange. Mr. Leza is a distinguished alumnus from both Stanford University GSB where, in 1999, he was awarded the Jerry Porras Award for Outstanding Business Achievement, and NMSU’s College of Engineering where he was awarded the 1990 Distinguished Alumni Award. The couple most
recently signed a major gift pledge agreement and made their first pledge payment for transformative support of retention scholarships, which are part of the overall mission of Learning Communities in Engineering. In honor of this investment, which exceeds the threshold for naming, we are requesting to have room 331 named “Richard and Cynthia Leza”.

- **Anonymous Donor Couple #1:** An alum who is a longstanding supporter and volunteer, and his wife, believe anonymity is an important part of philanthropy, therefore they do not wish to have a room named in their honor. However, they do wish to honor the late Dr. George W. Lucky, one of NMSU’s most beloved and well-regarded Electrical Engineering professors. Dr. Lucky has been cited by countless EE alumni as an influential mentor who helped them begin their careers. The couple recently signed a major gift pledge agreement and made their first pledge payment to Learning Communities. In honor of this investment, which exceeds the threshold for naming, we are requesting to have Room 449 named the “Dr. George W. Lucky Conference Room”.

- **Christopher and Linda Long:** Chris and Linda Long are both NMSU alumni, with Chris graduating in 1995 with a BS and MS in Electrical Engineering and Linda graduating in 1996 with a BS in Elementary Education. Chris is currently the Vice President of NSS at Orbital ATK, an aerospace and defense company located in Dulles, Virginia. Chris serves as an active member of NMSU’s College of Engineering Dean’s Advisory Council, and NMSU’s Klipsch School of Electrical and Computer Engineering Academy. The couple recently signed a major gift pledge agreement and made the first two pledge payments to Learning Communities. In honor of this investment, which exceeded the threshold for naming, we are requesting to have Room 341 named “Chris and Linda Long.”

- **TRAX International LLC:** TRAX International LLC has been a long time support of NMSU. Their first donation was in 1998, and over the years they have given substantially to the University. TRAX has also established cooperative internship employment opportunities for NMSU students, with a particular focus on students enrolled in the College of Engineering. They have increased their presence within the NMSU Office of Placement and Career Services for career opportunities at White Sands Missile Range (both TRAX and Government). Their support over the years lines up with the Learning Communities vision to give NMSU engineering students the opportunity to develop the skills they need to succeed in school, at work, and in life by redesigning their learning environment to meet 21st-century demands. They most recently made a major gift to student capstone projects, which is an important component of Learning Communities. In honor of this investment, which exceeds the threshold for naming, we are requesting to have room 346 named “TRAX International LLC”.

- **MAE Academy:** The Mechanical and Aerospace Engineering (MAE) Academy is devoted to providing financial support for students, faculty, and staff in the MAE Department at NMSU. Additionally, they provide guidance on new programs, job placement opportunities, and emerging opportunities in the field of Mechanical Engineering. The MAE Academy was ahead of its time in launching a mentoring service called STEAM! Club, which has now been rolled into Learning Communities. The MAE Academy recently made a significant contribution to Learning Communities and anticipates providing ongoing significant annual support for the STEAM! Club and additional Learning Communities mentors. In honor of this investment, which meets the threshold for naming, we are requesting to have the combined Rooms 337 and 339 named “Mechanical and Aerospace Engineering Academy”.
- **Halliburton**: Halliburton has had a long-standing relationship with NMSU. In 1985, they gave their first donation to NMSU. They have given a total of $177,585 since then. Halliburton has also worked to stay connected with College of Engineering leadership; Richard Montman a 1978 Geological Engineering alumnus has represented Halliburton on the College of Engineering Dean’s Advisory Council since 2012. Richard has helped lead the way for Halliburton to work with Career Services to showcase careers available to graduating NMSU students. Halliburton’s most recent donation to NMSU is to support and retain women entering into the study of Engineering. Their goal is to increase student retention resulting in more students advancing through the engineering program rather than changing majors or dropping out. They most recently made a significant gift for WELcome (Halliburton Women in Engineering Learning Communities). In honor of this investment, which exceeds the threshold for naming, we are requesting to have room 348 named “Halliburton”.

- **Colonel (Ret) Arthur and Dianna Hurtado**: Art Hurtado is a ’78 MS Electrical Engineering alumnus of NMSU. Both he and his wife Dianna have maintained a close connection to the University, including Art’s important role in establishing NMSU’s Klipsch School of Electrical and Computer Engineering Academy. Art also provides ongoing service as a member of NMSU’s College of Engineering Dean’s Advisory Council, and Dianna oversees the couple’s generous lifetime commitments to NMSU. Art’s career has included both military service and establishing and selling his own private electronics company. The couple recently signed a pledge and made the first pledge payment for significant support of Learning Communities. In honor of this investment, which exceeds the threshold for naming, we are requesting to have Room 335 named “Art and Dianna Hurtado”.

- **Anonymous Donor Couple #2**: An alum and his spouse who have been major supporters of the College of Engineering for many years have requested anonymity for their giving, however they wish to honor the class of 1968 in Mechanical Engineering. The couple recently made a significant gift to Learning Communities. In honor of this investment, which exceeds the threshold for naming, we are requesting to have Room 344 named “Mechanical Engineering Class of 1968”.

- **Randolph Rothschild**: Randy Rothschild is an ’88 BS Electrical Engineering alumnus, and a longtime volunteer in the College of Engineering. Randy has served for four years as the Chair of the NMSU’s College of Engineering Dean’s Advisory Council. He is proud of his service, and has numerous activities in-progress with Dean Reddi to build stronger connections between his employer – Raytheon Corporation – and NMSU’s College of Engineering. Randy most recently signed a significant pledge agreement and made the first pledge payment to Learning Communities. In honor of this investment, which meets the threshold for naming, we are requesting to have Room 362 named “Randolph Rothschild Dean’s Advisory Council Chair”.

These gifts and request for naming opportunity meet the naming policy criteria as noted in the section F.4.a. Minimum thresholds were previously approved in November 2017.
Board of Regents Meeting
Meeting Date: April 6, 2018
Agenda Item Cover Page

☐ Action Item
☒ Consent Item
☐ Informational Item

Presented By: Glen Haubold, AVP Facilities
Heather Watenpaugh, University Architect

Agenda Item: NMSU-Carlsbad Chemistry Lab Room 230

Requested Action of the Board of Regents: Approval of renovation of NMSU-Carlsbad Chemistry Lab Room 230

Executive Summary: The improved Chemistry Lab Room will include a modern, safe, and versatile educational wet-laboratory for students.

References:
N/A

Prior Approvals:
N/A

Agenda Item Approved By:

Glen Haubold, Associate Vice President for Facilities and Services

Andrew J. Burke, Senior Vice President Administration and Finance
Board of Regents

NMSU – Carlsbad
Chemistry Lab
Room 230 Renovation
Proposed Scope of Work

Project Budget $535,000

Provide the design and construction for approximately 946 square foot area renovation of NMSU-Carlsbad Chemistry Lab Room 230. The improved space will include a modern, safe, and versatile educational wet-laboratory for students.
Proposed Project Schedule

• Completion of Design – October 2018
• Start of Construction – December 2018
• Completion of Construction – April 2019
Funding Sources and Prior Approvals

Project Funding – $535,000
• Minor Capital Outlay (Carlsbad funds)

Prior Approval
• Regents Real Estate Committee

Approval schedule
• NMSU Board of Regents – April 6, 2018
• HED Capital Outlay Committee – May 9, 2018
• State Board of Finance – June 19, 2018
Facilities Condition Index and Utilization

AssetWorks Facilities Management System 2014
• 33.9%

Ad Astra Scheduling Software Fall 2017
• 68-hour week
• Room Hour Utility 14.48%
• Fill Ratio Actual Enrollment 49.54%
Agenda Item: Honorary Posthumous Degree

Requested Action of the Board of Regents: Motion to approve awarding of posthumous master’s degree to Kristopher Burke and to approve awarding of posthumous doctoral degree to Eugene A. Benton

Executive Summary: Mr. Burke died unexpectedly this semester and had completed about 90% of the work required for a master’s degree in Geology. His family supports this request. Mr. Benton died in May of 2017 having completed all requirements for a doctoral degree from the Department of Curriculum and Instruction except his doctoral defense. Mr. Benton’s award is supported by family members.

References: None

Prior Approvals: Burke – Department Head Dr. Carol Campbell; Dean Enrico Pontelli; Provost Daniel Howard. Benton – Department Head Dr. David Rutledge, Associate Dean Dr. Enedina Vazquez, Provost Daniel Howard

Agenda Item Approved By:

Melody Munson-McGee
Chief of Staff, Executive Vice President and Provost’s Office
31 March 2018

To: Provost Daniel Howard

From: Carol Campbell, Department Head, NMSU Department of Geography

Through: Dean Enrico Pontelli

Re: Posthumous Degree for Kristopher Burke (800027679)

By this memo, we request that the Provost’s Office work with other needed units on campus to see that a posthumous Master of Applied Geography (MAG) degree is awarded to Kristopher Burke, a Masters student in the Department of Geography, who recently passed away unexpectedly. Prior to his death, Kris was actively working on his Master of Applied Geography degree, and he was making excellent progress on his important collaborative research into mobility zones with the City of Las Cruces. Kris completed all his coursework for the degree and had submitted a draft of his residency paper to his advisor. He was working on revisions at the time of his death. Due to his efforts, Kris completed 90% of the work required for his degree and, thus, meets the requirement for the posthumous degree that NMSU APR 5.50 notes is needed for the degree.

We have reached out to the family, who supports this action, and we ask that staff with the Provost’s Office and other needed units on campus see that this degree is in order so that the award of this degree can happen at the afternoon May 12, 2018 commencement ceremony. Thank you in advance for your efforts to see that the Burke family is awarded the degree Kris was so close to completing.
Request/Petition for Posthumous Honorary Doctorate for Mr. Eugene A. Benton

Passed: May 12th, 2017

Date: April 2nd, 2018

Department of Curriculum & Instruction Faculty
Department Head and Faculty – Dr. David Rutledge
College of Education
New Mexico State University

Dear Dean Don Pope Davis and Provost Dan Howard:

The Department of Curriculum and Instruction Faculty members unanimously approved the request for a Posthumous Honorary Doctorate for Mr. Eugene Benton.

According to the New Mexico State University Administrative Rules and Procedures (ARP) section 5.50, an academic department may nominate a student for a posthumous award of an Honorary Degree if the student has completed at least 85% of required coursework. The Posthumous degree must be approved by the academic department, the academic dean, the executive vice president and provost, and the Board of Regents. The ARP, section 18.05 additionally describes the process by which the university’s Board of Regents may confer honorary degrees, including the honorary doctorate. These awards are “ceremonial degrees approved by the Board of Regents to formally honor individuals whose accomplishments have brought honor or recognition to the university”.

We provide twenty letters of support from NMSU and Tucson, AZ colleagues, friends, family, clergy, and political leaders with first-hand knowledge of Mr. Eugene Benton’s professional and community contributions and civic engagement made throughout his life as a professional educator and an engaged Tucson community member. This request coupled with the letters of support clearly substantiate and add credence to the established criteria of NMSU’s Posthumous Honorary Doctorate

Following is a formal request for the award of a posthumous honorary doctorate for Mr. Eugene Alfred Benton who passed away in May 2017, having completed all but the dissertation defense in his efforts toward earning the doctoral degree. Within the Formal Request/Petition packet for a Posthumous Honorary Doctorate included are several attachments:

Attachment 1—Graduate School Verification with signatures;
Attachment 2—Support Letters/Testimonies from four NMSU Graduates and Colleagues of Mr. Eugene Benton: Drs. Rudolfo Chávez Chávez, Regents Professor Emeritus, NMSU; Anne Gallegos, Regents Professor Emerita, NMSU; Hermán García, Regents Professor Emeritus, NMSU; and Dr. Paul Martínez, Founder & Professor (retired) Center for Education & Study of Diverse Populations, NMHU.
Attachment 3—Support Letter/Testimony from Most Reverend Gerald F. Kicanas, Bishop Emeritus of Tucson
Attachment 4—Support Letter/Testimony from Mr. Raúl M. Grijalva, United States Congressman
Attachment 5—Support Letters/Testimonies of eighteen educators and individuals ranging from classroom teachers to administrators at all levels, professors, politicians, religious order both lay and clergy, and one family member.

Thank you for your consideration of this request.

Sincerely,

[Signature]

Rudolfo Chávez Chávez, Regents Professor Emeritus
Anne Gallegos, Regents Professor Emerita
Hermán Garcia, Regents Professor Emeritus
Agenda Item: Update from Center for Academic Advising and Student Support (CAASS), plus Student Engagement

Requested Action of the Board of Regents: None

Executive Summary: Per request by the Board of Regents, this informational item will update on Advising, Holds, Freshman Experience, Meta Majors, Predictive Analytics, and Freshman Experience Courses. Presentation materials include an update on CAASS (by Dr. Hodges) and Freshman Experience Courses (Dr. Marin), with a data set relevant to this item. Additional supplemental materials cover fall-to-spring retention, an update from Housing and Residential Life on Freshman Year Residential Experience, and strategic planning docs from CAASS.

References: See Supplemental Materials

Prior Approvals: none

Agenda Item Approved By:

Melody Munson-McGee
Chief of Staff, Executive Vice President and Provost’s Office
CAASS Implementation Milestones

• Garcia Center
  – Completion target May 2018
  – Signage and Wayfinding
    • “Annex” removed as of March 15
  – Welcome Center
    • Lighting by April 2018
    • Remaining furniture by May 2018
  – Office furniture

• Staffing
  – Director and Associate Director
  – Two open full-time positions
    • One filled via placement 4/2/18
    • One filled by search – closed 3/27
  – Four GA’s graduating May 2018
  – Potential retirement(s)
Building Synergy between Academic Advising and Faculty Mentoring

• CAASS Vision, Mission, Values, and Goals written
• NACADA facilitated sessions March 26 & 27
  – Faculty Mentoring Approaches within a Centralized Advising Structure
• Student Learning Outcomes for both Advising and Mentoring
  – Target date August 2018
  – Learning opportunities for SLOs mapped by end of Fall 2018 semester
• Assessment Plans
Advising Holds

• Pre-CAASS practices
  – Varied by College/Department - First Year Students, Low GPA’s, All Students

• CAASS target populations for Fall 2017 Advising (AV) holds
  – First semester students, Freshmen, EXPL/UNCL, Pre-Majors, BIS/BAS, Low GPA’s, Unsatisfactory critical course grades, Student Athletes

• Additional Fall 2017 AV holds placed
  – College of Education – First Year Students, Low GPA’s
  – Certain Departments within A&S – students without CAASS holds
  – Nursing students with low GPA’s
Advising Holds

• Creation of the Departmental Mentoring (DM) hold
  – 11 Departments have request DM holds (A&S and ENGR) for Spring 2018
  – College of Education has removed first-year holds
  – Working with Nursing on holds coordination

• CAASS adjustments to target populations for Spring 2018 AV holds
  – Lower Division Business no longer considered pre-major
  – No holds on less than 2.5 GPA if at least 105 credits earned
  – Identifying student athletes who do not need a hold
  – Clearing Pre-Engineering designation
Advising Holds

• CAASS capacity is about 1500 student appointments per week
• Perceived capacity issues from Fall 2017
  – Voicemail messages – about 1/3 already had an appointment
  – No shows
  – Student without holds who wanted to be advised
  – Walk-in traffic driven by pre-req issues
• Strategies for Spring 2018
  – Early Advising
  – Phone, Email, and Text reminders
• Strategies for 2018-2019
  – Online scheduling system
Proactive Indicator-Based Outreach

**Fall Outreach**
- Quick Connect
- Canvas no-activity
- College Student Inventory
- Early Performance Grades
- Academic Planning Workshops
- Advising for Spring
- Enrollment Calling Campaign

**Spring Outreach**
- Quick Connect
- Canvas no-activity
- Online Academic Workshop
- Early Advising for Summer/Fall
- Early Performance Grades
- Scholarship Check
- Advising for Summer/Fall
- Enrollment Calling Campaign
Proactive Indicator-Based Outreach

- CRM Advise has not met our predictive analytics nor our case management needs
- Current tools – Quick Connect, Calling Campaign, Cognos, Banner Student Profile, “native” Banner, BDMS, CAASS tools
- The process of identifying and implementing a comprehensive tool will be a system-wide collaboration
Retention of El Paso Students

- 92 non-returners identified by Institutional Analysis
  - 33 earned a 2.0 GPA or higher during Fall 2017
  - 33 earned less than 2.0 GPA (but greater than 0.00)
  - 17 earned 0.00 GPA for Fall
  - 8 institutional withdrawals for Fall 2017
  - 1 dropped for non-payment for Spring 2018
Retention of El Paso Students

• Attempted to contact the 33 students with a 2.0 or higher GPA by phone – 10 reached

• Educational plans – 6 enrolled at UTEP, 3 enrolled at EPCC, 1 joined the military, 4 considering returning to NMSU

• Best experience at NMSU
  – Meeting new people, making friends, – 6
  – Professors, classes, academics – 3
  – Involvement in student organization – 1

• Reasons for not returning
  – Financial – 3 friendly people
  – Commute – 2
  – Cost of housing/meals – 3
  – Bad housing experience - 2
CAASS Structure and Meta-Majors

- CAASS advising teams based on the Meta-Major academic program groupings as well as past major-changing behaviors
- CAASS training sessions provided an opportunity for faculty from majors within each meta-major group to interact across colleges
- Meta-Major groupings provide a structure for strategic placement of related LLC’s within the residence halls
- Meta-Major maps are an advising tool as opposed to an academic program that students enroll in or are required to complete
- As of Spring 2018, 90 students are coded EXPL or AS-UNCL
Building the Infrastructure for Student Success

- **Academic Planning Tools**
  - CAASS will provide feedback to departments on Degree Maps, Degree Audit, and Catalog and propose a common format for 8 semester plans

- **Student Records Upkeep**
  - Since June 2017, CAASS has processed over 500 degree audit exceptions and over 4000 updates to students’ academic programs

- **Coordinated messaging about the impact of GPA and progress toward degree on funding options for college**

- **Course Availability and Delivery**
  - Partnered with Math Dept on pilot of mini-mester AS 103 “recovery course”
  - Feedback and requests to colleges regarding course schedule needs
  - CAASS participation on NMSUO task force
The Aggie Journey
(proposed student success plan framework)

• First Semester Structured Experience
  – Delivery options including, but not limited to: freshman seminar courses, learning communities, and online modules

• Second Semester Goal Completion Plan – accessible ePortfolio
  – Academic Goals (including personalized 8 semester plan)
  – Co-curricular Plan (including Experiential Learning)
  – Financial Plan
  – Career Plan

• Pre-Graduation Career Preparation Experience
NMSU
Freshman Year Experience Courses

• UNIV 150 Freshman Year Experience Course
  – Overview of UNIV 150
  – Career Development
  – Peer Educator Component (UNIV 350)
  – Program Outcomes
NMSU
Freshman Year Experience Courses

• Freshman Year Experience Collaborations
  – Agricultural, Consumer and Environmental Sciences
  – Arts and Sciences
  – Education
  – Engineering
### Freshman Year Experience Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Number of Students Enrolled</th>
</tr>
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<tbody>
<tr>
<td>AS 101</td>
<td>20</td>
</tr>
<tr>
<td>ACES 111</td>
<td>257</td>
</tr>
<tr>
<td>CEP 199</td>
<td>97</td>
</tr>
<tr>
<td>ENG 100, 100 H</td>
<td>286</td>
</tr>
<tr>
<td>UNIV 150</td>
<td>159</td>
</tr>
</tbody>
</table>
# First-time Entering "Freshman" Experience Courses

**Fall 2016 and Fall 2017**

**New Mexico State University, Las Cruces**

## Number of Students Enrolled in Freshman Experience Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>A S101</td>
<td>SUCCESS SEMINAR</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>ACES111</td>
<td>FRESHMAN ORIENTATION</td>
<td>266</td>
<td>292</td>
</tr>
<tr>
<td>C EP199</td>
<td>ACADEMIC EXCELLENCE</td>
<td>94</td>
<td>100</td>
</tr>
<tr>
<td>ENGR100, 100H</td>
<td>INTRO TO ENGINEERING</td>
<td>345</td>
<td>383</td>
</tr>
<tr>
<td>UNIV150</td>
<td>FRESHMAN YR EXPERIENCE</td>
<td>339</td>
<td>162</td>
</tr>
</tbody>
</table>

*Note: Students other than first-time entering freshmen may take these courses*  

## Freshman Experience Course Enrollment Statistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACES111 (and all ACES Freshmen)</td>
<td>FRESHMAN ORIENTATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Sections Taught</td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Number of ACES Freshmen in Course</td>
<td></td>
<td>233</td>
<td>257</td>
</tr>
<tr>
<td>% of ACES Freshmen in Course</td>
<td></td>
<td>84%</td>
<td>90%</td>
</tr>
<tr>
<td>Number of ACES Freshmen in Other Courses*</td>
<td></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>% of ACES Freshmen Not in ANY Freshman Seminar</td>
<td></td>
<td>15%</td>
<td>8%</td>
</tr>
<tr>
<td>C EP199 (and all ED Freshmen)</td>
<td>ACADEMIC EXCELLENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Sections Taught</td>
<td></td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Number of ED Freshmen in Course</td>
<td></td>
<td>92</td>
<td>97</td>
</tr>
<tr>
<td>% of ED Freshmen in Course</td>
<td></td>
<td>47%</td>
<td>42%</td>
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<tr>
<td>Number of ED Freshmen in Other Courses*</td>
<td></td>
<td>10</td>
<td>9</td>
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<tr>
<td>% of ED Freshmen Not in ANY Freshman Seminar</td>
<td></td>
<td>51%</td>
<td>54%</td>
</tr>
<tr>
<td>ENGR100, 100H (and all EG Freshmen)</td>
<td>INTRO TO ENGINEERING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Sections Taught**</td>
<td></td>
<td>12</td>
<td>12</td>
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<tr>
<td>Number of EG Freshmen in Course</td>
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<td>230</td>
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<td>% of EG Freshmen in Course</td>
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<td>72%</td>
<td>81%</td>
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<td>Number of EG Freshmen in Other Courses*</td>
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<td>2</td>
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<tr>
<td>% of EG Freshmen Not in ANY Freshman Seminar</td>
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<td>24%</td>
<td>19%</td>
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<tr>
<td>UNIV150 (all Freshmen)</td>
<td>FRESHMAN YR EXPERIENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Sections Taught</td>
<td></td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Number of Freshmen in Course</td>
<td></td>
<td>329</td>
<td>159</td>
</tr>
<tr>
<td>% of Freshmen in Course</td>
<td></td>
<td>18%</td>
<td>8%</td>
</tr>
<tr>
<td>Number of Freshmen in Other Courses*</td>
<td></td>
<td>574</td>
<td>679</td>
</tr>
<tr>
<td>% of Freshmen Not in ANY Freshman Seminar</td>
<td></td>
<td>52%</td>
<td>59%</td>
</tr>
</tbody>
</table>

*Students enroll in multiple freshman experience courses regardless of major*

*Note: A S103 Success Seminar (Arts & Sciences) enrollments are included in the "Other Course" enrollments in UNIV 150 section for Fall 2017; There was one section of A S 103 in Fall 2017.*

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Full-time First-time Entering Student Cohort
Entering Fall to First Spring Retention Rates
New Mexico State University, Las Cruces

Trend of NMSU Full-time "Freshman Cohort" Fall-to-Spring and Fall-to-Fall Retention Rates

Fall 2017:
2,033 Entering Students; 86.6% Retained to Spring

Fall 2017:
More students came from elsewhere in New Mexico and from El Paso, Texas

Fall 2017:
Fall to Spring retention rates increased for Las Cruces students, dropped sharply for students from El Paso and dipped slightly for all other students

04/05/2018
Full-time First-time Entering Student Cohort
Entering Fall to First Spring Retention Rates
New Mexico State University, Las Cruces

Retention Rates for Freshmen Students Living On-Campus versus Off-Campus by High School Region, Fall 2017

El Paso Freshmen by Housing Type

El Paso Freshmen GPA by Housing Type, End of Fall Semester 2017

Percentage of El Paso Freshmen who Owe $1,000 or More in Institutional Debt by Housing Status, Fall 2017

On-Campus

Off-Campus

$33%

$12%

04/05/2018

$33%

$12%

04/05/2018
Faculty Fellows

Objectives: The main objectives for the Faculty Fellows program are to bring faculty into the residential living spaces on campus and to create informal interactions between faculty and students outside the classroom. We are achieving these objectives, as illustrated by our activity and programming interactions. Of over 200 events and activities in our residential communities in fall 2017, Faculty Fellows attended or co-planned 60%. With an average per-program attendance of over 26 students, this bears out to an enormous number of students whose experiences in campus housing involved interactions with faculty.

Purpose: A significant purpose of the Faculty Fellows and Faculty in Residence programs is to foster an environment where students make meaningful connections with faculty. Reasons for encouraging connections are numerous, and based on national data:

- Students who interact with faculty outside the classroom have better educational outcomes than their peers;
- Building a relationship with a faculty member offers a student one more “touch point” at NMSU who cares and who is an engaged partner in their persistence in college;
- Faculty can serve as important personal and professional mentors to students, and can make a student feel safer and more at home by offering a grounded, adult presence in that student’s life.

We are hearing frequent, consistent reports from students, Residential Life staff, and faculty that these purposes are being fulfilled one student at a time as they meet and interact with their Faculty Fellows or Faculty in Residence.

Looking to the Future: Of the 28 faculty members currently on our team as Faculty Fellows, 25 have indicated that they plan to return to the role next year. We are thrilled with this number; it reaffirms that the role is both enjoyable and beneficial, and provides continuity as we continue to develop the program. As part of the recruitment process for 2018-2019, we are designing a bit more structure into the program to help provide direction and support.

We’ve found that it would help to offer a small meal plan (a few meals per semester) to each Faculty Fellow to allow them to dine with residents; this is a venue where they have some of the most candid and genuine interactions with students.

There are some areas of campus where Faculty Fellows are “responsible” for a large geographic area and student population. The program could benefit greatly from the ability to hire additional Faculty Fellows to allow them to have a more personal student-to-faculty ratio. The long-term ideal would be to have one Faculty Fellow per RA, but even strategic placement of 8-12 additional Faculty Fellows for 2018-2019 could make a significant difference in the frequency and types of interactions each Faculty Fellow could have with students.

Additionally, we will soon be administering the 2017-2018 SkyFactor survey of campus residents, which will provide tangible data to describe how the campus experience has affected student learning and student satisfaction given the variety of intentional interventions put in place this academic year to support students.

Pleasant Surprises: While the focus of these outcomes highlights the benefits to students, we are finding that Faculty Fellows are feeling more engaged and enjoying the time they spend with students, even influencing their teaching style and curriculum. Faculty presence is becoming a staple at events, Hall Council meetings, and staff meetings.

Student Success Partnership

We developed a collaborative initiative with Campus Tutoring and Campus Dining to offer tutoring in Taos five night a week starting the week after spring break. The spring pilot will include two first-year courses that frequently require tutoring: CHEM 111 and BIOL 111. First-year students are the least likely to participate in campus tutoring, and we believe bringing tutoring to an environment they already use daily (the dining hall) will increase their likelihood of utilizing tutoring, increase their success in two challenging courses, and encourage their future use of tutoring services. Course faculty will be advertising in their classes and we will be marketing in campus housing, Taos, and in the tutoring center.
Living Learning Communities

In 2017-2018, 45% of freshman residents (29% of overall first-year population) participated in one of 18 LLCs. Of those students, over half participated in at least one academic course paired with their LLC. We plan to maintain the same LLC offerings for the next academic year in order to allow these communities to continue to flourish, and we will reassess our offerings again next year based on SkyFactor data, assignments requests, and student and faculty feedback. We are in the process of designating paired LLC courses for the 2018-2019 academic year.

Student Conduct – Serious Incidents Down by Over 25%

Overall conduct numbers from fall 2016 to fall 2017 have remained relatively flat proportionate to the number of students living on campus from one year to the next. Encouragingly, serious offenses (alcohol, damage and destruction, disruptive behavior, drugs, fire safety, harassment, harm to persons, stolen property, and threatening behavior) have reduced by about 19.6% in raw numbers and approximately 26.5% when calculated proportionate to the larger population of fall 2017. We believe the more proactive approach and increased interactions between residents and Housing staff have developed respectful communities where students feel a sense of pride and responsibility for their neighbors.

We saw a slight increase in reporting and adjudication of less severe violations of housing policies such as candles or pets. Likely, these are not indicative of an increase in policy-breaking behavior, rather, they serve as evidence that our student and professional staff members have been more observant and involved in the lives of students in the last year, thus confronting, documenting, and correcting greater numbers of smaller-scale violations that have likely gone undetected previously.

Residential Life Programming

The Residential Life team has worked to increase the quality of programs offered to campus residents this year. While half of the spring semester remains, fall and early spring numbers show that we are engaging students at a significantly higher rate than last year. Comparing fall 2016 to fall 2017, average per-program attendance has more than doubled (11.93 to 26.05) and our team has served over 2,100 more attendees at events and activities than same time last year.

Faculty Fellows reported being involved in or attending over 165 housing events August 2017 - February 2018

<table>
<thead>
<tr>
<th></th>
<th>FALL 2017</th>
<th>SPRING 2018 FIRST 8 WEEKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESIDENCE HALLS AND APARTMENTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total events</td>
<td>188</td>
<td>83</td>
</tr>
<tr>
<td>Total attendees</td>
<td>4020</td>
<td>1585</td>
</tr>
<tr>
<td>Unique attendees</td>
<td>1480</td>
<td>687</td>
</tr>
<tr>
<td>Average attendance per program</td>
<td>21.27</td>
<td>19.13</td>
</tr>
<tr>
<td>Planned in partnership with Faculty Fellows</td>
<td>75</td>
<td>20+</td>
</tr>
<tr>
<td><strong>STUDENT FAMILY HOUSING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total events</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Total attendees</td>
<td>1424</td>
<td>369</td>
</tr>
<tr>
<td>Average attendance per program</td>
<td>67.8</td>
<td>17.5</td>
</tr>
<tr>
<td>Planned in partnership with Faculty Fellows</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Proactive Student Success and Retention Initiative for Fall

Because approximately 150 campus residents with critically low GPAs did not return from fall to spring, we have identified six factors influencing student success and retention in the first year (academic preparation, interpersonal relationships, alcohol and drug use, mental and physical health, financial wellbeing, and behavioral standards). We have designed six weeks of intentional programming that we will implement during the first six weeks of classes in fall 2018 addressing each of these issues in depth through interactive, creative activities and strategic collaborations. Our hope is to provide an enticing incentive for campus residents to participate in the campus-wide activity offered each week of this initiative, as well as a prize for students who attend all six weeks of events.
Vision 2020 Strategic Plan Alignment – Center for Academic Advising and Student Support

Planning Framework

Unit Goals, Metrics, and Timeline

Current Strategies

Major Accomplishments

Aspirations

Mission

The Center for Academic Advising and Student Support (CAASS) teaches undergraduate students how to define and achieve their academic, personal, and career goals for college. CAASS collaborates with partners across the NMSU system and beyond to proactively connect with students at strategic points throughout their college careers to support student retention and persistence.

Vision

The Center for Academic Advising and Student Support (CAASS) will be an integrated part of a student persistence infrastructure at NMSU organized around the student journey rather than any specific unit or process. CAASS will provide leadership in creating a system-wide culture that views advising as teaching and values the role of advising in student persistence and engagement. CAASS will be recognized as an exemplary academic advising unit at the local, state, regional, national, and global levels.

Values

- Every Student
- Diversity and Inclusion
- Accountability and Transparency
- Collaboration and Partnerships

Goals

Although CAASS supports all 5 of the Vision 2020 Goals, the unit is primarily focused on Goal 1 Academics and Graduation.

Goal 1

Implement a centralized advising model at NMSU

- Garcia Center will meet the functional needs of CAASS and be easy for students to find
- CAASS will be adequately staffed with a faculty that meets the needs of undergraduate students
- Develop a mission, vision, and goals, and learning outcomes for both academic advising within CAASS and faculty mentoring within the colleges
- Build the technology infrastructure needed to facilitate advising and student persistence
- Evaluate policies, procedures, and processes and modify as needed to utilize new advising model

Vision 2020 Goal Alignment: Academics and Graduation, Diversity, and Internationalization, Research and Creative Activity, Resource Stewardship

Goal 2

Provide proactive outreach and support to student persistence

- Develop proactive outreach based on Student Characteristics such as: first-year freshmen, new internal and external transfer students, and rising seniors within two semesters of graduating
- Develop proactive outreach based on Student Academic Behaviors/Indicators such as: canvass activity, quick connect alerts, early performance grades, successful completion of critical courses, schedule changes, GPA, and timely registration
- Collaborate with Financial Aid and Student Accounts to identify students who are at risk of not making progress toward their degrees based on financial indicators
- Collaborate with system-wide partners to identify and implement a technology tool that will facilitate indicator-based outreach

Vision 2020 Goal Alignment: Academics and Graduation

Goal 3

Build the infrastructure for student success

- Partner with ADAC and Faculty Senate to review academic policies to facilitate student success
- Partner with the Colleges and Registrar’s Office to analyze and improve Academic Planning Tools
- Recovery course duty to Colleges and Grad Administration on course availability to facilitate student progress
- Collaborate with Financial Aid and Student Accounts to address financial aspects of student persistence
- Seek out grant funding to support student success initiatives
- Explore opportunities to collaborate with student affairs and system colleagues

Vision 2020 Goal Alignment: Academics and Graduation, Research and Creative Activity, Resource Stewardship

Current Strategies

- Working with facilities to improve the functionality of the Garcia Center interior and address the wayfinding issues of the Garcia Center exterior
- Working with the Provost’s Office, Human Resources, and Budget to fill vacant positions
- Create a project team consisting of academic deans and vice chancellors to facilitate the organization and training of advising staff
- Hitachi will develop the technology-enhanced face-to-face training methods to build staff excellence
- Facilitate NACADA participation for advisor training and professional development
- Collaborate with Department Heads and Departmental Faculty Advising Liaisons
- Organize NACADA facilitated discussions of metrics
- Continue to modify procedures and processes in collaboration with SIM and ICT, explore and create technology tools as needed

Values

- Assign every first-year seeking undergraduate student a specific CAASS advisor to facilitate a case management approach to outreach
- Invite all freshmen to meet with their advisor to discuss College Student Inventories (CSI) results
- Outreach and other forms of credit to increase accuracy of student records and decrease the likelihood of students taking courses that they don’t need
- Collaborate with Quick Connect coordinator to assign students their assigned advisor
- Contact students who have not logged into their Canvass sites for each of their courses
- Contact students whose Early Performance Grades indicate that a student is struggling
- Contact students whose Early Performance Grades indicator that a student is struggling
- Collaborate with the colleges to identify students who are not succeeding in critical courses
- Require advising for targeted student populations
- Partner with the Student Success Center on outreach to students on Academic Warning

Major Accomplishments

- In Fall 2017, advisors contacted 1362 students to discuss the CSI and met with 804 students
- During the Spring 2018 Canvas outreach, the number of students who had not logged into their courses dropped from 1647 to 521
- CAASS advisors responded to 400 Quick Connects during the fall semester
- Since June 2017, CAASS has processed over 500 degree audit exceptions and over 4000 updates to students’ academic programs (i.e. major changes, catalog updates, adding minors, etc.)
- In Spring 2018, CAASS identified 1200 students for outreach based on Early Performance Grades and intervened with 913
- The Associate Director facilitated Aggie Graduation 2018-2019 assistance program for 20 students during the Spring 2018 semester
- In Fall 2017, CAASS conducted 3553 walk-in visits and 9460 appointments
- In collaboration with Engineering, outreach to 311 students at risk of not continuing in Engineering due to multiple repeated courses was conducted

Goals

- Guaranteed full-time advisors to reach a 300:1 student to advisor ratio
- Develop and implement a student learning outcomes assessment plan for the 2018-2019 academic year
- Further develop the Faculty Advising Liaison role
- Develop student learning outcomes assessment with Faculty Mentoring
- Create an electronic file for each student that is accessible to appropriate partners (rather than multiple files per student associated with different processes or units)
- Create “how-to” videos to be viewed in the CAASS welcome center and on the CAASS website
- Develop a system-wide work flow for degree audit exceptions

Aspirations

- Identify and utilize a technology tool that would facilitate and track both student initiated interactions (i.e., appointments or walk-ins) as well as advisor initiated interactions (i.e. proactive outreach)
- When a graduation application is submitted, no exceptions would need to be processed because the record had been updated throughout the student’s academic career rather than at the end
- Multiple communication methods (such as text, email, social media, and phone calls) are accessible to advisors and are effective in reaching students

Page 54 of 123
Board of Regents Meeting  
Meeting Date: April 6, 2018  
Agenda Item Cover Page

☑ Action Item

Presented By: Senior Vice President Andy Burke

Agenda Item:
Tuition and Fee Rates and Budget Guidelines for FY2018-2019

Requested Action of the Board of Regents:
Administration recommends approval of the Tuition and Fee Rates and Budget Guidelines for FY2018-2019.

Executive Summary:
In line with the annual budget development process, Administration will present recommended FY2018-2019 tuition and fee rates plus Sources/Uses for each NMSU campus.

References:
N/A

Prior Approvals:
N/A

Agenda Item Approved By:

Andrew J. Burke, Senior Vice President Administration and Finance

04/05/2018  
Page 55 of 123
Board of Regents
April 6, 2018

Tuition and Fee Rates
and Budget Guidelines for FY2018-2019

Andrew J. Burke
Senior Vice President for Administration and Finance
## Annual Cost of Education Comparison – FY18

<table>
<thead>
<tr>
<th>Institution</th>
<th>In-State Tuition and Fees</th>
<th>Out of State Tuition and Fees</th>
<th>Room and Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Arizona</td>
<td>11,877</td>
<td>35,307</td>
<td>12,200</td>
</tr>
<tr>
<td>Texas Tech University</td>
<td>10,771</td>
<td>23,011</td>
<td>9,384</td>
</tr>
<tr>
<td>University of Texas at El Paso</td>
<td>7,651</td>
<td>21,396</td>
<td>9,496</td>
</tr>
<tr>
<td>New Mexico Tech</td>
<td>7,183</td>
<td>20,991</td>
<td>8,202</td>
</tr>
<tr>
<td>University of New Mexico</td>
<td>7,146</td>
<td>22,037</td>
<td>9,662</td>
</tr>
<tr>
<td>New Mexico State University</td>
<td>7122&lt;sup&gt;b&lt;/sup&gt;</td>
<td>22,701</td>
<td>8,686</td>
</tr>
<tr>
<td>Western New Mexico University</td>
<td>6,824</td>
<td>15,231</td>
<td>8,110</td>
</tr>
<tr>
<td>Eastern New Mexico University</td>
<td>5,918</td>
<td>11,693</td>
<td>6,958</td>
</tr>
</tbody>
</table>

<sup>a</sup> In-state tuition and fees per credit hour for NMSU, UNM, and UTEP is $269, $310, and $376 respectively.

<sup>b</sup> A 3% tuition increase in FY19 would result in In-State Tuition and Fees of $7,336.

Source: FY18 Cost of Education, College Board, https://bigfuture.collegeboard.org/compare-colleges#
Note: The average tuition and fees rate increase over the past five years was 3.4% for full-time and 1.4% per credit. The full-time tuition and fee rate was based on 12 credits in FY14, and a flat 15 credits in FY15 going forward.
New Mexico State University - Las Cruces Campus
Required Fees Budget Allocation
FY18-19 Funding Requests for Fee Supported Activities

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASNMSU Student Activity</td>
<td>$ 700,000</td>
<td>$ -</td>
<td></td>
<td>$ 700,000</td>
</tr>
<tr>
<td>ASNMSU Endowment</td>
<td>$ 25,000</td>
<td>-</td>
<td></td>
<td>$ 25,000</td>
</tr>
<tr>
<td>ASNMSU Maintenance Fund</td>
<td>$ 20,000</td>
<td>-</td>
<td></td>
<td>$ 20,000</td>
</tr>
<tr>
<td>Campus Activities</td>
<td>$ 200,000</td>
<td>-</td>
<td></td>
<td>$ 200,000</td>
</tr>
<tr>
<td>Campus Tutoring Services</td>
<td>$ 40,750</td>
<td>-</td>
<td></td>
<td>$ 40,750</td>
</tr>
<tr>
<td>Fixed Fee Units - Operations</td>
<td>$ 12,354,520</td>
<td>$ 54,700</td>
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<td>$ 12,409,220</td>
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<tr>
<td>ICT</td>
<td>$ 1,475,000</td>
<td>-</td>
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<td>$ 1,475,000</td>
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<tr>
<td>Library</td>
<td>$ 250,000</td>
<td>$ 15,000</td>
<td></td>
<td>$ 265,000</td>
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<tr>
<td>Intramurals</td>
<td>-</td>
<td>$ 60,000</td>
<td></td>
<td>$ 60,000</td>
</tr>
<tr>
<td>LGBT Plus</td>
<td>$ 48,425</td>
<td>(48,425)</td>
<td>B</td>
<td>-</td>
</tr>
<tr>
<td>Sponsored Programs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMSU Cheerleaders</td>
<td>$ 45,000</td>
<td>-</td>
<td></td>
<td>$ 45,000</td>
</tr>
<tr>
<td>Pride Band</td>
<td>$ 54,150</td>
<td>-</td>
<td></td>
<td>$ 54,150</td>
</tr>
<tr>
<td>Study Abroad</td>
<td>$ 30,700</td>
<td>-</td>
<td></td>
<td>$ 30,700</td>
</tr>
<tr>
<td>Student Media (The Roundup-Krux)</td>
<td>$ 150,000</td>
<td>$ 18,000</td>
<td></td>
<td>$ 168,000</td>
</tr>
<tr>
<td>Transit - Bus Service</td>
<td>$ 200,000</td>
<td>$ 48,050</td>
<td></td>
<td>$ 248,050</td>
</tr>
<tr>
<td>WAVE (Peer Counseling)</td>
<td>$ 43,000</td>
<td>$ 800</td>
<td></td>
<td>$ 43,800</td>
</tr>
</tbody>
</table>

**Total Fee Allocations**  
$ 15,636,545  $ 148,125  $ 15,784,670

A - Includes a 2% reduction in student credit hours and a 3% increase in student fee rates  
B - Position funding will be provided through I&G starting in FY19
# New Mexico State University - Las Cruces Campus

**Proposed Tuition and Fee Rates**

**Fiscal Year 2018-2019**

<table>
<thead>
<tr>
<th>Undergraduate Rates</th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Tuition and Fees</th>
<th>Proposed Increase</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition</td>
<td>Fees</td>
<td>Total</td>
<td>Tuition</td>
</tr>
<tr>
<td><strong>Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hourly Rate (1-14)</td>
<td>$221.80</td>
<td>$47.40</td>
<td>$269.20</td>
<td>$228.20</td>
</tr>
<tr>
<td>Flat Rate (15 and above)</td>
<td>190.00</td>
<td>47.40</td>
<td>237.40</td>
<td>195.70</td>
</tr>
<tr>
<td>135 Mile Texas Rate (1-14)</td>
<td>244.00</td>
<td>47.40</td>
<td>291.40</td>
<td>251.00</td>
</tr>
<tr>
<td>135 Mile Texas Rate (15 and above)</td>
<td>209.00</td>
<td>47.40</td>
<td>256.40</td>
<td>215.30</td>
</tr>
<tr>
<td><strong>Non-Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hourly Rate (1-14)</td>
<td>828.50</td>
<td>47.40</td>
<td>875.90</td>
<td>852.50</td>
</tr>
<tr>
<td>Flat Rate (15 and above)</td>
<td>709.30</td>
<td>47.40</td>
<td>756.70</td>
<td>730.60</td>
</tr>
</tbody>
</table>

## Graduate Rates

<table>
<thead>
<tr>
<th><strong>Resident Students:</strong></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Tuition and Fees</th>
<th>Proposed Increase</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Rate (1-14)</td>
<td>243.90</td>
<td>47.40</td>
<td>291.30</td>
<td>251.00</td>
</tr>
<tr>
<td>Flat Rate (15 and above)</td>
<td>208.90</td>
<td>47.40</td>
<td>256.30</td>
<td>215.20</td>
</tr>
<tr>
<td>135 Mile Texas Rate (1-14)</td>
<td>268.30</td>
<td>47.40</td>
<td>315.70</td>
<td>276.10</td>
</tr>
<tr>
<td>135 Mile Texas Rate (15 and above)</td>
<td>228.80</td>
<td>47.40</td>
<td>277.20</td>
<td>236.70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Non-Resident Students:</strong></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Tuition and Fees</th>
<th>Proposed Increase</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Rate (1-14)</td>
<td>850.50</td>
<td>47.40</td>
<td>897.90</td>
<td>875.20</td>
</tr>
<tr>
<td>Flat Rate (15 and above)</td>
<td>728.10</td>
<td>47.40</td>
<td>775.50</td>
<td>749.90</td>
</tr>
</tbody>
</table>

*Note: Proposed tuition increase is 3% for students taking 15 credit hours and above, and 2.9% for students taking 1-14 credit hours.*
# New Mexico State University - Las Cruces Campus
## Proposed Tuition and Fee Full-Time Rates
### Fiscal Year 2018-2019

<table>
<thead>
<tr>
<th></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Tuition and Fees</th>
<th>Proposed Increase</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition</td>
<td>Fees</td>
<td>Total</td>
<td>Tuition</td>
</tr>
<tr>
<td><strong>Undergraduate Rates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Rate (12 CH)</td>
<td>$2,661.60</td>
<td>$568.80</td>
<td>$3,230.40</td>
<td>$2,738.40</td>
</tr>
<tr>
<td>Full Time Rate (15 CH)</td>
<td>2,850.00</td>
<td>711.00</td>
<td>3,561.00</td>
<td>2,935.50</td>
</tr>
<tr>
<td><strong>Non-Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Rate (12 CH)</td>
<td>9,942.00</td>
<td>568.80</td>
<td>10,510.80</td>
<td>10,230.00</td>
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<tr>
<td>Full Time Rate (15 CH)</td>
<td>10,639.50</td>
<td>711.00</td>
<td>11,350.50</td>
<td>10,959.00</td>
</tr>
<tr>
<td><strong>Graduate Rates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Rate (9 CH)</td>
<td>2,195.10</td>
<td>426.60</td>
<td>2,621.70</td>
<td>2,259.00</td>
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<tr>
<td><strong>Non-Resident Students:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Rate (9 CH)</td>
<td>7,654.50</td>
<td>426.60</td>
<td>8,081.10</td>
<td>7,876.80</td>
</tr>
</tbody>
</table>

Note: Proposed tuition increase is 3% for students taking 15 credit hours and above, and 2.9% for students taking 1-14 credit hours.
Average NMSU Salary Increase

<table>
<thead>
<tr>
<th>Year</th>
<th>Salary Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY09</td>
<td>2.00%</td>
</tr>
<tr>
<td>FY10</td>
<td>0.00%</td>
</tr>
<tr>
<td>FY11</td>
<td>0.00%</td>
</tr>
<tr>
<td>FY12</td>
<td>0.00%</td>
</tr>
<tr>
<td>FY13</td>
<td>2.00%</td>
</tr>
<tr>
<td>FY14</td>
<td>1.00%</td>
</tr>
<tr>
<td>FY15</td>
<td>1.50%</td>
</tr>
<tr>
<td>FY16</td>
<td>0.00%</td>
</tr>
<tr>
<td>FY17</td>
<td>0.00%</td>
</tr>
<tr>
<td>FY18</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Ten Year Average Salary Increase 0.65%
CPI 1.68%
### New Mexico State University - Las Cruces Campus

**Recommended FY2018-19 Sources & Uses of New I&G Funds**

**3% Tuition and Fee Increase Proposal**

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Sources of New Revenues</th>
<th>Estimated Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I&amp;G State Appropriations per House Bill 2</td>
<td>$2,006,300</td>
</tr>
<tr>
<td>2</td>
<td>I&amp;G State Appropriations - Compensation, per House Bill 2 (and HED breakdown)</td>
<td>$1,555,800</td>
</tr>
<tr>
<td>3</td>
<td>Enrollment Projection (estimate 1% decrease as of 2/7/18)</td>
<td>(800,000)</td>
</tr>
<tr>
<td>4</td>
<td>Tuition Revenue from Approved Non-Resident Tuition Rate Changes</td>
<td>$1,480,000</td>
</tr>
<tr>
<td>5</td>
<td>Tuition Rate Increase (3% increase in full time rate; 2.9% increase per credit hour)</td>
<td>$2,137,500</td>
</tr>
<tr>
<td>6</td>
<td>Re-allocation of Permanent Salary Savings (to cover Faculty Promotion &amp; Tenure)</td>
<td>465,000</td>
</tr>
<tr>
<td>7</td>
<td>Budget Reduction and/or Reallocation</td>
<td>885,900</td>
</tr>
<tr>
<td>8</td>
<td><strong>Total Estimated Sources / Revenues</strong></td>
<td><strong>$7,730,500</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Strategic Investments (Uses / Expenditures)</th>
<th>Estimated Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Faculty and Staff Compensation Increase of 2%, plus fringes</td>
<td>$2,860,200</td>
</tr>
<tr>
<td>10</td>
<td>Faculty Compensation ($1,440,200) 2% Merit</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Exempt Staff Compensation ($821,800) 2% Merit</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Non-Exempt Staff Compensation ($598,200) $1,000 Flat (1.00 FTE)</td>
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</tr>
<tr>
<td>13</td>
<td>Faculty Promotion &amp; Tenure Fund (promotions eff. 7/1/18)</td>
<td>465,000</td>
</tr>
<tr>
<td>14</td>
<td>Increase in Fringe Rate (projected increase from 36% to 36.5%)</td>
<td>531,200</td>
</tr>
<tr>
<td>15</td>
<td>New Positions, salary plus fringes (details listed below)</td>
<td>221,100</td>
</tr>
<tr>
<td>16</td>
<td>Compliance Officer in General Counsel Office</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Equity Officer / Investigator in Office of Institutional Equity</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Investment in Online Education (including Summer Courses)</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Graduate Assistant Stipends $500 Flat (0.50 FTE)</td>
<td>403,000</td>
</tr>
<tr>
<td>20</td>
<td>ICT Maintenance (software/hardware contractual obligations)</td>
<td>350,000</td>
</tr>
<tr>
<td>21</td>
<td>Create a Strategic Investment Pool for New Chancellor</td>
<td>500,000</td>
</tr>
<tr>
<td>22</td>
<td>Investment in Scholarships</td>
<td>2,000,000</td>
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<tr>
<td>23</td>
<td>Recruiting</td>
<td>300,000</td>
</tr>
</tbody>
</table>

**Total Estimated Uses / Expenditures** | $7,730,500
New Mexico State University - Las Cruces Campus
FY2018-19 Sources & Uses of New I&G Funds
Alternative Tuition and Fee Scenarios

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Sources of New Revenues</th>
<th>2.5% Tuition &amp; Fee Increase</th>
<th>3.5% Tuition &amp; Fee Increase</th>
<th>4.0% Tuition &amp; Fee Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I&amp;G State Appropriations per House Bill 2</td>
<td>$2,006,300</td>
<td>$2,006,300</td>
<td>$2,006,300</td>
</tr>
<tr>
<td>2</td>
<td>I&amp;G State Appropriations - Compensation, per House Bill 2 (and HED breakdown)</td>
<td>1,555,800</td>
<td>1,555,800</td>
<td>1,555,800</td>
</tr>
<tr>
<td>3</td>
<td>Enrollment Projection (estimate 1% decrease as of 2/7/18)</td>
<td>(800,000)</td>
<td>(800,000)</td>
<td>(800,000)</td>
</tr>
<tr>
<td>4</td>
<td>Tuition Revenue from Approved Non-Resident Tuition Rate Changes</td>
<td>1,480,000</td>
<td>1,480,000</td>
<td>1,480,000</td>
</tr>
<tr>
<td>5</td>
<td>Tuition Rate Increase (3% increase in full time rate; 2.9% increase per credit hour)</td>
<td>1,603,125</td>
<td>2,671,875</td>
<td>3,206,250</td>
</tr>
<tr>
<td>6</td>
<td>Re-allocation of Permanent Salary Savings (to cover Faculty Promotion &amp; Tenure)</td>
<td>465,000</td>
<td>465,000</td>
<td>465,000</td>
</tr>
<tr>
<td>7</td>
<td>Budget Reduction and/or Reallocation</td>
<td>1,420,275</td>
<td>351,525</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td><strong>Total Estimated Sources / Revenues</strong></td>
<td><strong>$7,730,500</strong></td>
<td><strong>$7,730,500</strong></td>
<td><strong>$7,913,350</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Strategic Investments (Uses / Expenditures)</th>
<th>Estimated Amount</th>
<th>Estimated Amount</th>
<th>Estimated Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Faculty and Staff Compensation Increase of 2%, plus fringes</td>
<td>$2,860,200</td>
<td>$2,860,200</td>
<td>$2,860,200</td>
</tr>
<tr>
<td>10</td>
<td>Faculty Compensation ($1,440,200) 2% Merit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Exempt Staff Compensation ($821,800) 2% Merit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Non-Exempt Staff Compensation ($598,200) $1,000 Flat (1.00 FTE)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Faculty Promotion &amp; Tenure Fund (promotions eff. 7/1/18)</td>
<td>465,000</td>
<td>465,000</td>
<td>465,000</td>
</tr>
<tr>
<td>14</td>
<td>Increase in Fringe Rate (projected increase from 36% to 36.5%)</td>
<td>531,200</td>
<td>531,200</td>
<td>531,200</td>
</tr>
<tr>
<td>15</td>
<td>New Positions, salary plus fringes (details listed below)</td>
<td>221,100</td>
<td>221,100</td>
<td>221,100</td>
</tr>
<tr>
<td>16</td>
<td>Compliance Officer in General Counsel Office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Equity Officer / Investigator in Office of Institutional Equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Investment in Online Education (including Summer Courses)</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>19</td>
<td>Graduate Assistant Stipends $500 Flat (0.50 FTE)</td>
<td>403,000</td>
<td>403,000</td>
<td>403,000</td>
</tr>
<tr>
<td>20</td>
<td>ICT Maintenance (software/hardware contractual obligations)</td>
<td>350,000</td>
<td>350,000</td>
<td>350,000</td>
</tr>
<tr>
<td>21</td>
<td>Create a Strategic Investment Pool for New Chancellor</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
</tr>
<tr>
<td>22</td>
<td>Investment in Scholarships</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td>2,000,000</td>
</tr>
<tr>
<td>23</td>
<td>Recruiting</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
</tr>
<tr>
<td>24</td>
<td><strong>Total Estimated Uses / Expenditures</strong></td>
<td><strong>$7,730,500</strong></td>
<td><strong>$7,730,500</strong></td>
<td><strong>$7,730,500</strong></td>
</tr>
<tr>
<td>25</td>
<td>Surplus</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td>26</td>
<td><strong>Total Surplus</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>$182,850</strong></td>
</tr>
</tbody>
</table>

04/05/2018   Page 64 of 123
New Mexico State University - Alamogordo Campus
Recommended FY18-19Sources and Uses of New I&G Funds
Tuition and Fee Proposal

Sources/Revenues:

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund I&amp;G Appropriation from HB2</td>
<td>$(114,200)</td>
</tr>
<tr>
<td>General Fund I&amp;G Appropriation for Compensation from HB2, including 30% Fringes</td>
<td>106,900</td>
</tr>
<tr>
<td>Tuition &amp; Fees Increase (Keep Flat)</td>
<td>-</td>
</tr>
<tr>
<td>Enrollment Adjustment - 5% Decrease</td>
<td>$(116,430)</td>
</tr>
<tr>
<td>Change in Tax Mil Levy</td>
<td>37,000</td>
</tr>
<tr>
<td>Other Revenues</td>
<td>53,400</td>
</tr>
<tr>
<td>Permanent Budget Reduction/Reallocation (7.4%)</td>
<td>720,305</td>
</tr>
<tr>
<td><strong>Total Sources</strong></td>
<td>$ 686,975</td>
</tr>
</tbody>
</table>

Uses/Expenditures:

<table>
<thead>
<tr>
<th>Use</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty and Staff Compensation Increase of 2%, including fringes</td>
<td>$ 108,700</td>
</tr>
<tr>
<td>Increase in Fringe Rate (36% to 36.5%)</td>
<td>26,370</td>
</tr>
<tr>
<td>New Faculty/Staff Position, including fringes</td>
<td></td>
</tr>
<tr>
<td>Fine Arts</td>
<td>106,489</td>
</tr>
<tr>
<td>Allied Health</td>
<td>70,639</td>
</tr>
<tr>
<td>Math</td>
<td>68,250</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>51,188</td>
</tr>
<tr>
<td>Electronics</td>
<td>63,700</td>
</tr>
<tr>
<td>General Education</td>
<td>72,959</td>
</tr>
<tr>
<td>Other Expenditures (Increase in Overloads - including QM overloads)</td>
<td>118,680</td>
</tr>
<tr>
<td><strong>Total Uses</strong></td>
<td>$ 686,975</td>
</tr>
</tbody>
</table>

Tuition & Fee Rates - Current and Proposed

<table>
<thead>
<tr>
<th></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Proposed Tuition and Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition Fees Total Full-Time</td>
<td>Tuition Fees Total Full-Time Proposed Increase Percentage Change</td>
</tr>
<tr>
<td>Resident In-District</td>
<td>78 8 86 1,032</td>
<td>78 8 86 1,032</td>
</tr>
<tr>
<td>Resident Out-District</td>
<td>93 8 101 1,212</td>
<td>93 8 101 1,212</td>
</tr>
<tr>
<td>Non-resident</td>
<td>216 8 224 2,688</td>
<td>216 8 224 2,688</td>
</tr>
</tbody>
</table>

Operational Mil Levy = 1 mil
New Mexico State University - Carlsbad Campus  
Recommended FY18-19 Sources and Uses of New I&G Funds 
Tuition and Fee Proposal

### Sources/Revenues:

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund I&amp;G Appropriation from HB2</td>
<td>$40,700</td>
</tr>
<tr>
<td>General Fund I&amp;G Appropriation for Compensation from HB2, including 30% Fringes</td>
<td>43,300</td>
</tr>
<tr>
<td>Tuition &amp; Fees Increase (Keep Flat)</td>
<td>-</td>
</tr>
<tr>
<td>Enrollment Adjustment - 5% Increase</td>
<td>63,800</td>
</tr>
<tr>
<td>Change in Tax Mil Levy</td>
<td>120,000</td>
</tr>
<tr>
<td>Rent for Early College High School</td>
<td>45,000</td>
</tr>
<tr>
<td><strong>Total Sources</strong></td>
<td>$312,800</td>
</tr>
</tbody>
</table>

### Uses/Expenditures:

<table>
<thead>
<tr>
<th>Use</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty and Staff Compensation Increase of 2%, including fringes</td>
<td>$129,000</td>
</tr>
<tr>
<td>Increase in Fringe Rate (36% to 36.5%)</td>
<td>23,800</td>
</tr>
<tr>
<td>Faculty Promotion and Tenure Fund, including fringes</td>
<td>25,000</td>
</tr>
<tr>
<td>New H/R Position, including fringes</td>
<td>35,000</td>
</tr>
<tr>
<td>Increase Security to Level 3</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Total Uses</strong></td>
<td>$312,800</td>
</tr>
</tbody>
</table>

### Tuition & Fee Rates - Current and Proposed (Note 1)

<table>
<thead>
<tr>
<th></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Proposed Tuition and Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition</td>
<td>Fees</td>
</tr>
<tr>
<td>Resident In-District</td>
<td>41</td>
<td>8</td>
</tr>
<tr>
<td>Resident Out-District</td>
<td>74</td>
<td>8</td>
</tr>
<tr>
<td>Non-resident</td>
<td>159</td>
<td>8</td>
</tr>
</tbody>
</table>

**Note 1:** Full-time rates reflect a Health Clinic Fee of $50 charged per semester for Full-Time Students only.

Operational Mil Levy = 3 mils
New Mexico State University - Dona Ana Campus
Recommended FY18-19 Sources and Uses of New I&G Funds
Tuition and Fee Proposal

Sources/Revenues:

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund I&amp;G Appropriation from HB2</td>
<td>$378,600</td>
</tr>
<tr>
<td>General Fund I&amp;G Appropriation for Compensation from HB2, including 30% Fringes</td>
<td>321,200</td>
</tr>
<tr>
<td>Tuition &amp; Fees Increase (3% Blended)</td>
<td>223,146</td>
</tr>
<tr>
<td>Enrollment Adjustment - 1.5% Decrease</td>
<td>(112,744)</td>
</tr>
<tr>
<td>Change in Tax Mil Levy</td>
<td>300,000</td>
</tr>
<tr>
<td><strong>Total Sources</strong></td>
<td><strong>$1,110,202</strong></td>
</tr>
</tbody>
</table>

Uses/Expenditures:

<table>
<thead>
<tr>
<th>Use</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty and Staff Compensation Increase of 2%, including fringes</td>
<td>$546,731</td>
</tr>
<tr>
<td>Increase in Fringe Rate (36% to 36.5%)</td>
<td>92,375</td>
</tr>
<tr>
<td>Faculty Promotion and Tenure Fund, including fringes</td>
<td>75,892</td>
</tr>
<tr>
<td>Student Fee Supported Units (Student Tech and Student Gov’t)</td>
<td>25,000</td>
</tr>
<tr>
<td>Retention Initiatives (new faculty positions, etc)</td>
<td>88,725</td>
</tr>
<tr>
<td>Operational Expenses (institutional support, internal services, etc)</td>
<td>225,527</td>
</tr>
<tr>
<td>DACC Marketing (student app, program marketing, etc)</td>
<td>42,000</td>
</tr>
<tr>
<td>Student Employees (increasing use of student employees)</td>
<td>13,952</td>
</tr>
<tr>
<td><strong>Total Uses</strong></td>
<td><strong>$1,110,202</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Proposed Tuition and Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition Fees Total Full-Time Tuition &amp; Fees</td>
<td>Tuition Fees Total Full-Time Tuition &amp; Fees</td>
</tr>
<tr>
<td>Resident In-District</td>
<td>64.00 8.00 72.00 864.00</td>
<td>65.75 8.25 74.00 888.00</td>
</tr>
<tr>
<td>Resident Out-District</td>
<td>79.00 8.00 87.00 1,044.00</td>
<td>81.75 8.25 90.00 1,080.00</td>
</tr>
<tr>
<td>Non-resident</td>
<td>221.00 8.00 229.00 2,748.00</td>
<td>227.75 8.25 236.00 2,832.00</td>
</tr>
</tbody>
</table>

04/05/2018
New Mexico State University - Grants Campus
Recommended FY18-19 Sources and Uses of New I&G Funds
Tuition and Fee Proposal

Sources/Revenues:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund I&amp;G Appropriation from HB2</td>
<td>$(16,000)</td>
</tr>
<tr>
<td>General Fund I&amp;G Appropriation for Compensation from HB2, including 30% Fringes</td>
<td>38,400</td>
</tr>
<tr>
<td>Tuition &amp; Fees Increase (Keep Flat)</td>
<td>-</td>
</tr>
<tr>
<td>Enrollment Adjustment - 10% Decrease</td>
<td>$(73,000)</td>
</tr>
<tr>
<td>Permanent Budget Reduction/Reallocation (4%)</td>
<td>178,276</td>
</tr>
<tr>
<td><strong>Total Sources</strong></td>
<td><strong>$ 127,676</strong></td>
</tr>
</tbody>
</table>

Uses/Expenditures:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty and Staff Compensation Increase of 2%, including fringes</td>
<td>$ 60,348</td>
</tr>
<tr>
<td>Increase in Fringe Rate (36% to 36.5%)</td>
<td>11,274</td>
</tr>
<tr>
<td>New 9-Month Faculty Position in Computer Technology, including fringes</td>
<td>53,054</td>
</tr>
<tr>
<td>Other Expenditures</td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Total Uses</strong></td>
<td><strong>$ 127,676</strong></td>
</tr>
</tbody>
</table>

Tuition & Fee Rates - Current and Proposed

<table>
<thead>
<tr>
<th></th>
<th>2017-2018 Actual Tuition and Fees</th>
<th>2018-2019 Proposed Tuition and Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tuition</td>
<td>Fees</td>
</tr>
<tr>
<td>Resident In-District</td>
<td>78</td>
<td>8</td>
</tr>
<tr>
<td>Resident Out-District</td>
<td>87</td>
<td>8</td>
</tr>
<tr>
<td>Non-resident</td>
<td>163</td>
<td>8</td>
</tr>
</tbody>
</table>

Operational Mi Levy = 1 mil
Board of Regents Meeting
Meeting Date: April 3, 2017
Agenda Item Cover Page

☑ Action Item

Presented By: Senior Vice President Andy Burke

Agenda Item:
Parking Rates for FY2018-2019

Requested Action of the Board of Regents:
Administration recommends approval of the Parking Rates for FY2018-2019.

Executive Summary:
In line with the annual budget development process, Administration will present recommended FY2018-2019 Parking rates.

References:
N/A

Prior Approvals:
N/A

Agenda Item Approved By:

Andrew J. Burke, Senior Vice President Administration and Finance
Board of Regents
April 6, 2018

Parking Rates for FY2018-2019

Andrew J. Burke
Senior Vice President for Administration and Finance
## Parking Rate Comparison FY18

<table>
<thead>
<tr>
<th>Institution</th>
<th>Transit</th>
<th># Parking Spaces</th>
<th>Free Parking</th>
<th># Parking Structures</th>
<th>Faculty &amp; Staff or Inner Campus</th>
<th>Outer or Remote Lot</th>
<th>Commuter</th>
<th>Campus Resident</th>
<th>Motorcycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Arizona</td>
<td>Yes</td>
<td>17,000</td>
<td>No</td>
<td>7</td>
<td>$581.00 $250.00 $581.00 $581.00</td>
<td>$152.00</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>University Of Texas El Paso</td>
<td>Yes</td>
<td>9,000</td>
<td>No</td>
<td>3</td>
<td>$503.56 $232.61 $235.75 $149.10</td>
<td>$185.15</td>
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<td></td>
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<tr>
<td>Montana State University*</td>
<td>No</td>
<td>7,200</td>
<td>No</td>
<td>0</td>
<td>$500.00 $40.00 $195.00 $195.00</td>
<td>$80.00</td>
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<td></td>
<td></td>
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<tr>
<td>University of New Mexico</td>
<td>Yes</td>
<td>11,000</td>
<td>No</td>
<td>3</td>
<td>$475.00 $175.00 $499.00 $499.00</td>
<td>$70.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas Tech University</td>
<td>No</td>
<td>18,700</td>
<td>No</td>
<td>1</td>
<td>$255.00 $127.00 $210.67 $340.00</td>
<td>$84.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Wyoming*</td>
<td>Yes</td>
<td>4,800</td>
<td>Yes</td>
<td>0</td>
<td>$196.00 $196.00 $130.50 $130.50</td>
<td>$22.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Idaho*</td>
<td>No</td>
<td>5,600</td>
<td>No</td>
<td>0</td>
<td>$172.00 $64.00 $172.00 $172.00</td>
<td>$-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico State University</td>
<td>No</td>
<td>13,500</td>
<td>Yes</td>
<td>0</td>
<td>$113.00 $67.00 $59.50 $59.50</td>
<td>$35.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Most comparable peers do not have parking structures

Peer rates are for access to surface parking, not structures.
FY19 Parking Permit Rates - Proposed

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Current Rate</th>
<th>Proposed Rate</th>
<th>Total Increase (1)</th>
<th>Monthly Increase</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/Staff</td>
<td>$ 113.00</td>
<td>$ 120.50</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>6.64%</td>
</tr>
<tr>
<td>Outer Lot Employee</td>
<td>$ 67.00</td>
<td>$ 74.50</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>11.19%</td>
</tr>
<tr>
<td>Commuter Student</td>
<td>$ 59.50</td>
<td>$ 67.00</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>12.61%</td>
</tr>
<tr>
<td>Campus Resident</td>
<td>$ 59.50</td>
<td>$ 67.00</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>12.61%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>$ 35.00</td>
<td>$ 42.50</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>21.43%</td>
</tr>
<tr>
<td>Special</td>
<td>$ 257.50</td>
<td>$ 265.00</td>
<td>$ 7.50</td>
<td>$ 0.63</td>
<td>2.91%</td>
</tr>
<tr>
<td>Free</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) Based on 12 month period

Estimated increase in revenue = $105,300
Agenda Item: Professional Master’s Degree in Computational Data Analytics

Requested Action of the Board of Regents: Motion to approve proposal for a professional master’s degree program in Computational Data Analytics

Executive Summary: The proposed Professional Master Computational Data Analytics (PMCDA) program is designed for students interested in developing expertise in data analytics, with specialization in computational analytics. Data analytics is an inherently interdisciplinary discipline, dealing with methods and systems to synthesize knowledge or insights from large quantities of data collected from heterogeneous sources and diverse spatial and time scales. Data analytics employs theories, methodologies, and tools drawn from many fields, within the broad areas of mathematics, statistics, and computer and information sciences, and applies them to a diversity of data-rich domains, such as life sciences, medicine, physical sciences, social sciences, engineering, business, and education. The proposed program will meet workforce needs based on our investigation and interviews of employers in local corporations (e.g., through the Borderplex Alliance) and national laboratories (e.g., Los Alamos, Sandia). The need for the program was also derived from extensive conversations with graduating students. The curricula were developed by a working group of faculty members from Computer Science, Applied Statistics, Mathematical Sciences, Industrial Engineering, and Electrical and Computer Engineering.

References: See Attached Proposal

Prior Approvals: Academic Dean Pollack, Dean Reyes, Associate Deans Academic Council Chair Torres, Faculty Senate Chair Brown, Provost Howard, Chancellor Carruthers

Agenda Item Approved By:

Melody Munson-McGee
Chief of Staff, Executive Vice President and Provost’s Office
### Faculty Senate Transmittal and Administrative Action Routing Form

**To:** Office of the Chancellor  
**From:** Faculty Senate Chair, Dr. Christopher Brown  
**RE:** Proposition: 23-17/18  
**Date:** March 5, 2018  
**cc:** Provost Office

Please find enclosed Faculty Senate Legislation **No. 23-17/18** entitled, "**New Degree in Professional Master in Computational Data**", approved by the Faculty Senate on, **March 1, 2018**.

#### Please Route for Approval:

<table>
<thead>
<tr>
<th>Faculty Senate Request</th>
<th>Action</th>
</tr>
</thead>
</table>
| X Your review and approval. Based on Policy 1.70 B. 2. b., your action is due within 40 working days from receipt of this transmittal, or **May 1, 2018**. | □ I acknowledge receipt of the above.  
□ I will respond further at a later date.  
□ I approve this legislation, and will process according to NMSU Rules & Policies.  
□ I approve this legislation on a provisional basis. It will become effective immediately, and I will place it on the Agenda for ratification at a future meeting of the Board of Regents.  
□ I veto this legislation.  
□ Other: |
|                | □ No action required; for informational purpose. |

**Garrey Carruthers, Chancellor**  
**Date:** 3/7/18

#### Please return completed, signed form to:

Gloria Podruchny, Faculty Senate Recording Secretary  
MSC 3445 Provost’s Office  
Email: gtopodru@nmsu.edu / Phone: (575)646-2127

---

**RECEIVED**  
**MAR 07 2018**  
NMSU PRESIDENT’S OFFICE

04/05/2018  
Page 74 of 123
Proposition: 23-17/18

Title: New Degree in Professional Master in Computational Data

Date Submitted: January 22, 2018

Sponsor(s): Satyajayant Misra (A&S); Richard Oliver (BUS); Rolfe Sassenfeld (A&S); Beth Pollack (A&S)

Proposed Committee:

Assigned Committee: Scholastic Affairs Committee

Prior Approvals: Graduate Council, Graduate Dean, ADAC

Proposal: Create a new degree: Professional Master in Computational Data Analytics

Rationale: Please see attached Proposal and New Degree Form

Under 2.3 in the Proposal it states:

The primary academic purpose of this professional degree program is to develop professional workforce that is prepared to address the needs in the rapidly expanding computational data analysis field. The students will be educated to work and excel in a variety of work settings, including private corporations, national laboratories, government and educational settings. By educating these students, we will be supplying qualified workforce to an industry, which is currently looking for cost effective ways of delivering more effective decision making based on diverse and heterogeneous data sets. The primary academic objectives for this proposed new degree program will be the development of high level skills in:

- Identifying and defining problems and decisions that can be answered by data
- Acquiring, analyzing and exploring data
  - Acquiring: getting, cleaning, archiving, integrating data
  - Analyzing: visually, mathematically, statistically
  - Exploring: seeking trends and patterns
- Managing and communicating data narratives (stories) that transform data into actionable information
- Exposure to real-world problems, through applied course in different disciplines and exploring partnerships with industry and national labs involving big data and data analysis.
AREA 1: Submission Information
College: The Graduate School
Department: 
Degree: Professional Master in Computational Data Analytics
Proposed Effective Term: Fall 2019
Person completing this application: Dr. Enrico Pontelli
Title: Dean, College of Arts & Sciences
Phone: 646-3500
Email: epontell@ad.nmsu.edu
Date Submission Started: January 4, 2018

The questions are designed to elicit brief, succinct, detailed information, rather than a narrative or references to extensive supporting documents. Do not attach other documents unless they are specifically requested. The total submission should be no more than 10-12 pages on a single classification of change. (The page limit excludes attachments.) Application will be for internal and external audiences. In addition, this application is compliant with New Mexico Higher Education Department (NM HED) Administrative Code, 5 NMAC 5.2 guidelines to develop graduate degree and certificate proposals. (http://www.nmcp.state.nm.us/nmac/parts/title05/05.005.0002.htm)

AREA 2: Checklist for Approvals
☐ Departmental Faculty  ☐ Faculty Senate
☐ Department Head  ☐ Provost
☐ College Curriculum Committee  ☐ Chancellor
☐ Academic Dean  ☐ Board of Regents (BOR)
☐ CC Academic VP*  ☐ NM Council of Graduate Deans**
☐ CC President*  ☐ Academic Council for Higher Education**
☐ Graduate Dean**  ☐ NM Higher Education Dept. (HED)
☐ CC System Academic Committee*  ☐ NM State Board of Finance**
☐ Associate Deans Acad. Council (ADAC)  ☐ Higher Learning Commission (HLC)
☐ Academic Deans Council (ADC)***  ☐ Send to Registrar’s Office (coding)

*For Associate Degrees/Certificates only.
**For Masters/Doctoral Degrees and Graduate Level Certificates only.
***ADC Approval is not needed for Associate Degrees/Certificates
AREA 3: General Questions

1. New academic program(s):
   - [ ] Certificate**+
   - [ ] Bachelor's
   - [ ] Diploma
   - [ ] Master's/specialist*
   - [ ] Associate's
   - [ ] Doctorate*
   - [ ] Check if program is at a new degree level

*Graduate programs must submit a Letter of Intent to the Office of the Provost, the Graduate School and the Office of Accreditation prior to this application process. The Graduate School will submit the letter to the New Mexico Higher Education Department (HED).
+Graduate certificates must include at least 12 credit hours of course work that is interrelated and designed to develop a focused skill or area of expertise. Certificate programs cannot exceed 18 credit hours. Courses must be regular approved courses offered by NMSU.

REQUIRED ATTACHMENTS

A. Catalog Description of the Program that includes (add at the end of the form)
   - [ ] Name of the program
   - [ ] Descriptive summary of the program
   - [ ] Purpose of the program, including program-level learning outcomes
   - [ ] Course requirements
   - [ ] Admissions requirements

   If the program is approved, catalog description will be published in the appropriate catalog and must be posted on the department website. Graduate programs will be forwarded to NM HED.

B. If already accredited, a copy of the Letter of Accreditation/Affiliation from the granting accreditation agency

C. Financial Summary Spreadsheet spanning a six (6) year period

D. Library Resource Report, authored by Library staff

E. Documentation of departmental faculty support and commitment by the offering department(s), including all departments that offer required courses (e.g. letters of support from the academic dean(s) and the department head(s) involved in course delivery*, faculty meeting minutes/vote; curriculum meeting minutes/vote; department head signature(s))
   *required for graduate programs

F. Inventory of each faculty member employed to teach in the program including
   - [ ] names of existing personnel
New Degree Form

- FTE
- Course load and courses they will teach in the proposed program
- Courses taught in other programs currently offered
- Description of academic qualifications
- Prior instructional responsibility and other experiences relevant to assigned courses
  For graduate programs document scholarship and research capability
  For doctoral programs, document faculty experience in directing student research.

G. Memorandum of Understanding (MOU), Articulation Agreements, Transfer Guide and/or Pathway, if applicable for
   - Joint, Dual or Cooperative degree applications
   - Consortial/Contractual agreement applications
   - Pathway articulation with NMSU-system campuss
   - Articulation with other institutions

H. Graduate Program applications
   - Letter of Intent

I. Bachelor Degree program applications
   - Alignment and inclusion in Meta-Major(s)

2. Special conditions. Do any of the conditions identified below fit to your college, department or program? (Yes or No.) If Yes, explain the situation.

   a) Is your college, department or program, in its relations with other specialized accrediting agencies, currently under or recommended for a negative status or action (e.g., withdrawal, probation, sanction, warning, show-cause, etc.)?
      NO

   b) Is your college, department or program now undergoing or facing substantial monitoring, special review, or financial restrictions from the U.S. Dept. of Education or other federal or state government agencies?
      NO
c) Has your college, department or program’s leadership or board membership experienced substantial resignations or removals in the past year?

NO

d) Is your department or program experiencing financial difficulty?

NO

e) Is your college, department or program experiencing other pressures that might affect its ability to carry out the proposal (e.g., a collective bargaining dispute or a significant lawsuit)?

NO

3. **Approvals.** Mark whether each type of approval is required prior to implementing the proposed change. If “Yes”, **attach documentation** of the approval to the request. If “No”, **attach evidence** that approval is not needed.

   Internal (faculty, board) approvals  □ Yes □ No

   System approvals  □ Yes □ No □ Not Applicable

   State approval  □ Yes □ No

   Foreign country(ies) approvals  □ Yes □ No □ Not Applicable

   For Distance or Correspondence Education only: process in place to ascertain and secure state approval(s) as required  □ Yes □ No
4. Specialized Accreditation.
   □ The college, department or program has already obtained the appropriate specialized accreditation. Is the accreditor CHEA recognized? Attach a copy of the letter from the agency granting accreditation.

   □ The college, department or program has begun the process of seeking or plans to seek specialized accreditation. Specify the name of the agency, whether the accreditor is CHEA recognized, and the timeline for completing the process in the space below. (If approval is a multi-stage process, your college, department or program should contact the NMSU Office of Accreditation to discuss the timeline before submitting this application.)

   □ Your college, department or program does not plan to seek specialized accreditation. If specialized accreditation is required for licensure or practice in the program(s) included in this application, provide a rationale for not seeking this accreditation in the space below.

AREA 4: Topic Specific Questions
Section A. Characteristics of the Change Requested

1. Identify the basic characteristics of the proposed educational program as indicated below:
   a) the full name of the proposed program, the specific degree(s) (if applicable) or the instructional level (if not a degree program), and the six-digit CIP code XX.XXXX of the program [CIP codes, program name, and additional description]

   NAME: Master Degree in Computational Data Analytics
   CIP Code:

   b) program-level learning outcomes

   The primary academic purpose of this professional degree program is to develop professional workforce that is prepared to address the needs in the rapidly expanding computational data analysis field. The primary academic objectives for this proposed new degree program will be the development of high level skills in: (1) Identifying and defining problems and decisions that can be answered by data; (2) Acquiring, analyzing and exploring data (Acquiring: getting, cleaning, archiving, integrating data; Analyzing: visually, mathematically, statistically; Exploring: seeking trends and patterns).

   c) list of academic departments/units and or institutions involved in the delivery of courses

   The Graduate School; Department of Computer Science; Department of Mathematical Sciences; Department of Electrical and Computer Engineering; Department of Industrial Engineering; Department of Economics, Applied Statistics and International Business.
d) total credit hours for completion of the program

34 graduate credits

e) normal or typical length of time for students to complete the program

Four semesters

f) proposed initial date for implementation of the program

Fall 2019

g) primary target audience for the program (e.g., full-time, part-time, traditional college age, working adults, transfer students, military personnel, or particular ethnic group)

Full time and part-time students, with an undergraduate degree in a scientific, technical, engineering, or mathematical field.

h) projected life of the program (single cohort or ongoing)

Ongoing

i) whether the program will be part of a contractual or consortial arrangement (see HLC definitions at https://www.hlcommission.org/Monitoring/consortial-arrangements.html and https://www.hlcommission.org/Monitoring/contractual-arrangements.html)

The program is not meant to be part of a contractual or consortial agreement
j) whether the program will be part of a Joint, Dual or Cooperative arrangement (see definitions at the end of this document)

The program is not meant to be part of a joint, dual or cooperative agreement.

k) name, title, degree and FTE status of faculty program coordinator/director or coordinator (if applicable). It is a requirement for all graduate certificate programs that the program coordinator be an NMSU full-time tenure track faculty member.

The program will live in the Graduate School, under Dean Loui Reyes. A program director will be appointed from one of the participating units. A steering committee will oversee the appointment of the program director and assess the operation of the program.

For Joint Degree Programs (one degree awarded by two separate Institutions) only:

l) rationale for the joint degree program

For Dual Degree Programs (two degrees awarded by one institution) only:

m) rationale for the dual degree program

n) admission requirements for both degrees

o) For undergraduate/graduate dual degree programs only, indicate the six credits that will be used to meet both degree requirements
2. Will NMSU need to request new stipulations from the Higher Learning Commission (HLC) for the proposed program? (e.g. ______________________) If yes, provide rationale for this request.

NO

3. Identify any planned program involvement by external organizations (other than programs in an accredited higher education institution) in key operations as identified below. Provide the requested information for each planned involvement. (Involvement by a parent company or by one of its subsidiaries external to your college, department or program in any of these operations should be reported.)

<table>
<thead>
<tr>
<th>Type of Involvement</th>
<th>Name(s) of External Organization(s)</th>
<th>Percent of Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Recruitment and admission of students</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>B. Course placement and advising of students</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>C. Design and oversight of curriculum</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>D. Direct Instruction and oversight</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>E. Other support for delivery of instruction</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
Section B. Institution’s and State’s History with Programs

4. Does the institution currently offer a program at the same instructional level and with the same 4-digit CIP code (XX.XX) as the proposed program? (If unknown, contact the Office of Institutional Analysis for this information.) If so, identify the program currently offered and whether it is a degree program. Will the proposed program replace the program currently offered?

5. Does the institution currently offer two or more programs at the same instructional level with the same 2-digit CIP code (XX.) as the proposed program? (If unknown, contact the Office of Institutional Analysis for this information.) If so, identify the two such programs with the highest numbers of graduates during the past year, along with their numbers of graduates.

Section C. Institutional Planning for Program Change

6. How does the proposed program align with the department, college and university mission?
The program is aligned with the institutional priorities - the area of Data has been identified as one of the signature areas for the institution.
The program is aligned with the research priorities of the Department of Computer Science - the department has identified data management, data mining and machine learning as core areas of development. The department is leading a number of Data analytics efforts (e.g., leading role in the Western Big Data hub).

7. What impact might the proposed program have on challenges identified as part of or subsequent to the last Higher Learning Commission (HLC) comprehensive visit or reaffirmation panel and how has the institution addressed the challenges?
None

8. If applicable, what impact might the proposed program have on challenges identified as part of or subsequent to the last specialized accreditation visit or reaffirmation panel and how has the college, department or program addressed the challenges?
9. Briefly describe the planning process for determining the need for this new program, including the role of faculty in the planning and approval process.

The need for the program is the result of a thorough investigation of workforce needs and interviews of employers in local corporations (e.g., through the Borderplex Alliance) and national laboratories (e.g., Los Alamos, Sandia). The need for the program was also derived from extensive conversations with graduating students. The curricula was developed by a working group of faculty members from Computer Science, Applied Statistics, Mathematical Sciences, Industrial Engineering, and Electrical and Computer Engineering.

10. What is the evidence that a market for the new program(s) exists? What need does it meet within the state or region? (evidence could include employer surveys, current labor market analyses and projections, summaries of student interests, etc.) How has estimated program demand been factored into realistic enrollment projections? Please provide enrollment projections for the first 5 years. How has this evidence been used in planning and budgeting processes to develop a quality program that can be sustained? For graduate programs: What support is available for graduate assistants?

Please see Section 3 of the attached proposal.

11. Graduate Programs: Provide evidence that the program does not duplicate an existing program in the state of NM. If it is similar to an existing program within the state, indicate how the demand for the proposed program cannot be met by the exiting program. If existing programs are present, how will this program work collaboratively with other institution(s) in NM to share resources?

The proposed professional degree program does not represent a duplication of any degree existing degree program offered within New Mexico. The University of New Mexico offers a data analytics concentration within the MS in Information Systems, with emphasis on business applications and data mining/management. Coverage of machine learning and computational methods is very limited. New Mexico Tech does not appear to offer any comparable program.

12. If the program request is approved, what future growth do you anticipate (e.g., in the next six months, three years) and how do you plan to manage this growth?

The program is expected to reach a stable population of 40 students after 2 years of operation. This is compatible with the existing faculty.

13. What are the admission requirements for students?

Requirements for admission to the program include the following: (1) A minimum grade-point average of 3.0 overall in the last two years of study, demonstrated by complete graduate and/or undergraduate transcripts. (2) A minimum mathematical background of Linear Algebra (e.g., MATH 280, E E 200) and two semesters of calculus (e.g., MATH 191 and MATH 192). (3) Three letters of reference from former professors or others able to assess the student's academic potential for graduate work. (4) A written statement of interest discussing professional objectives and plans and discussing how participation in the program would advance such plans.
14. What are the physical facilities and equipment needed to support the program? Indicate the impact that the proposed change will have on the physical resources and laboratories that currently accommodate existing programs and services, or identify new laboratory and preceptor needs.

No specific facilities or equipment components are required to support the program.

15. Discuss how admissions criteria and strategies will recruit a diverse student body?
   We propose to tackle this issue by investing special effort in targeting students from underrepresented groups during recruitment. A significant percentage of our own undergraduate students (over 50%) belong to minority groups. Within these segments of our population there are exceptionally talented students. NMSU is also geographically well-positioned to adequately serve a population with a significant presence of Hispanic and Native Americans. The departments involved have also strong ties with a number of universities and colleges with a predominantly minority population, who will provide another potential pool of talented applicants.

16. How does this program fit into the current and expected financial picture of your college, department or program? In particular, will the program be financially self-sufficient within three years? If not, when do you expect the program to be financially self-sufficient and how do you expect the program to operate until then? What is the institution/college's resource commitment to the program for the first 5 years?
   The program is sustainable as it builds on courses that are already in existence and regularly offered. There is sufficient bandwidth in such courses to absorb the additional demand posed by the proposed program. On the other hand, if highly successful, the program will provide adequate tuitions and fees to eventually enable the addition of personnel to support the program expansion. The College of Arts & Sciences commits release time for faculty members interested in developing additional courses for the program. The College of Arts & Sciences is committed to provide a course release each year to the program director if selected among the faculty members of the college.

17. Graduate Programs: Indicate state operational formula funding that will flow to the program, based on the projected student credit hours. Other support should also be included such as research grants, contracts or other sources.
   Please see Section 6 of the proposal

18. What controls are in place to ensure that the information presented to all constituencies in advertising, brochures, and other communications will be accurate?
   The program will operate under the supervision of a Dean (the Dean of the Graduate School) and a steering committee composed of representatives from the relevant collaborating departments. The committee will ensure that any documentation produced is truthful and accurate.
Section D. Curriculum and Instructional Design

19. List all the courses that comprise the program. Include course descriptions, learning outcomes, and number of credit hours for each.
   The program description can be found in section 2.4.1 of the attached proposal.

20. Indicate how the courses will be delivered (distance learning, online, face-to-face, hybrid, etc.)
    Initially the courses will be all delivered face-to-face. The future transition to online delivery will be explored after the first 3 years of operation.

21. Provide a detailed discussion of the program of study and course sequencing (curriculum map).
    For certificate programs, indicate the number and which courses can be transferred into a degree program (required for graduate certificate programs).
    Please see attached degree map.

22. What are the requirements students must fulfill to complete the program successfully (including specific courses, course options, thesis, and any other requirements)?
    Please see section 2.4.1 of the proposal

23. For programs using prior learning credit, compressed time frames, online delivery, accelerated formats, or other approaches to learning, explain how your college, department or program will ensure that student work and the levels of knowledge and competencies comparable to those required in traditional formats have been achieved.
    Not applicable

Section E. Institutional Staffing, Faculty, and Student Support

24. How many and what types of faculty (full-time, part-time, temporary) will be employed in the program? Why is the number and type of faculty sufficient to support the program?
    Please see section 5.1 of the proposal. Please note that the curriculum relies on existing courses that are regularly offered.
25. What will the impact of the new initiative be on faculty workload?
We do not expect the enrollment of the program to create a significant burden for faculty members with regard of the teaching aspects. The only additional load will be in the internship/project component of the program.

26. What library and information resources—general as well as specific to the program(s)—and staffing and services are in place to support the initiative? If the proposed new program is at the graduate level, document discipline-specific refereed journals and primary source materials.
We do not expect to need any additional library acquisitions, considering that there is a wealth of public domain materials on data analytics (software, books, reports, tutorials). The curriculum is composed of existing courses that are already benefiting of adequate library resources.

Section F. Evaluation

27. Describe the ongoing process for monitoring, evaluating, and improving the overall effectiveness and quality of the program.
Course-level assessment will be performed according to the existing assessment instruments within the departments. The steering committee will review progress of students in the program at the end of each semester and make recommendations (e.g., advise students on selection of courses). Assessment of learning outcomes will be performed through exit interviews and focus groups.

28. Describe the process for assessing and improving student persistence and completion, in the new program.
The steering committee will review performance of students in the program at the end of each semester and develop recommendations for choice of classes for the following semester. Students will be admitted as cohorts and assisted in collaborating through the academic experiences - e.g., through a dedicated facebook community and a Canvas group. Models for collaborative work will be introduced (e.g., Affinity Research Groups) to promote positive interdependence.

29. Describe the process for assessing and improving student learning, and particularly on using assessment results for continuous improvement (i.e. 'closing the loop').
Student learning will be assessed outside of the class through yearly focus groups, exit interviews and follow up interviews with randomly selected graduates at 6 months, 1 year and 3 years after graduation. Outcomes will be reviewed by the steering committee and used to make recommendations for modifications of the curriculum and recommendations to instructors of specific courses.

30. When will the program undergo the first cycle of program review and/or accreditation review?
The review of the program will be included as part of the program review cycle of one of the participating departments (e.g., Computer Science or Applied Statistics).
Section G: Joint, Dual, and Cooperative Degree Programs

Joint, dual or cooperative degree program proposals must provide a Letter of Intent to the Graduate School, the Office of the Provost and the Office of Accreditation prior to this application process. In addition, a Memorandum of Understanding (MOU) must accompany all Joint, Dual and Cooperative Degree program proposals.

Dual degree program: A program of study in which two degree granting departments or institutions combine a program of study that reduces the required number of courses and degree requirements students would need to take if they were enrolled in two separate degree programs. Students must complete two separate applications, be admitted to both degree granting departments and institutions, and meet the requirements of the dual degree program. On graduation, they receive two separate diplomas, one from each institution offering one of the degree programs. For dual degree programs with other universities, a duly executed MOU is required that includes:

- name of partnering institution
- accreditation status of the institution and program
- purpose of the dual degree program
- course curriculum (articulation agreement) indicating which courses will be taught by which institution (as well as the delivery mode for each course)
- additional graduation requirements for program completion for each institution
- transfer of credit policies for each degree program
- name and type of approved degrees awarded by each institution
- obligations of the participating institutions, including financial arrangements and student support issues, keeping of student records, and assessment of student learning
- statement on who is responsible for advising students
- statement on faculty supervision of theses and dissertations
- signature sheet of approval by senior administration of participating institutions
- process of adding participating institutions
- other, as defined by the participating institutions
- graduate programs only: thesis/dissertation/project report requirement (including whether one thesis/dissertation/project can meet the requirement for both institutions)
- termination or renewal date

Cooperative degree program: Cooperative degree programs allow institutions to offer degrees and/or certificate programs on the campus of another institution within the state, the region, the country or outside of the United States. A cooperative degree program involves a lead institution that organizes, coordinates, and administers the delivery of a degree program on the campus of another institution that itself does not offer the degree. In some cases, several institutions are involved in a cooperative degree
program. The lead institution is responsible for ensuring course coverage, degree requirements, and outcome assessment efforts. While courses are taught by the lead and partnering institutions, the diploma is issued by the lead institution. NMSU might be the lead institution or a member of a partnership. For all Cooperative degree programs, a duly executed MOU is required that includes the following:

- The title of the degree or certificate program that will be offered
- The number of courses including days and time periods for each semester
- The number of expected students that would use the facilities of the host institution
- The number of faculty that will require office space, if any, at the host institution
- The number and types of rooms needed
- Financial arrangements to use the facilities, if any
- Requirements of the host institution(s), such as the provision of library services
- The role of the host institution faculty, if any
- Other requirements as defined by the institutions

Joint degree program: Two or more degree granting departments or institutions collaborate to create a single degree program. Students are admitted into one program, take courses in each participating department and/or institution but only receive one degree and diploma. All participating institutions are designated on the student’s diploma. HLC does not allow for international joint degree programs. NMSU may enter into domestic Joint degree program arrangements with institutions/programs with accreditations recognized by the Council on Higher Education Association (CHEA). For Joint degree programs that involve other institutions, a duly executed MOU is required that includes:

- accreditation status of the cooperating programs and institution(s)
- name and type of approved degree to be awarded
- course curriculum indicating which courses will be taught by which department/institution
- any additional requirements for program completion
- transfer of credit policies
- financial arrangements, if applicable
- statement on who is responsible for advising students
- statement on faculty supervision of theses and dissertations
- signature sheet of approval by senior administration of participating institutions
- process of adding participating institutions
# New Degree Form

## AREA 5: Approval Signatures (in sequential order)

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental Faculty:</td>
<td></td>
</tr>
<tr>
<td>Department Head:</td>
<td></td>
</tr>
<tr>
<td>College Curriculum Committee:</td>
<td></td>
</tr>
<tr>
<td>Academic Dean:</td>
<td>1-4-18</td>
</tr>
<tr>
<td>CC Academic VP*:</td>
<td></td>
</tr>
<tr>
<td>CC President*:</td>
<td></td>
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<tr>
<td>Graduate Dean**:</td>
<td></td>
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<tr>
<td>See Signature on next page</td>
<td></td>
</tr>
<tr>
<td>CC System Academic Committee*:</td>
<td>11/22/18</td>
</tr>
<tr>
<td>Associate Deans Academic Council (ADAC):</td>
<td></td>
</tr>
<tr>
<td>Academic Deans Council (ADC)***:</td>
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*For Associate Degrees/Certificates only.
**For Masters/Doctoral Degrees and Graduate Level Certificates only.
***ADC Approval is not needed for Associate Degrees/Certificates
# New Degree Form

## Area 5: Approval Signatures (in sequential order)

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A Proposal for a Professional Master’s Degree Program in Computational Data Analytics at New Mexico State University

Administered by the College of Arts and Sciences, the College of Business, the College of Engineering, and the Graduate School

Las Cruces, New Mexico

Contact person who can answer specific questions about the program:

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1 Executive Summary
The proposed Professional Master Computational Data Analytics (PMCDA) program is designed for students interested in developing expertise in data analytics, with specialization in computational analytics. Data analytics is an inherently interdisciplinary discipline, dealing with methods and systems to synthesize knowledge or insights from large quantities of data collected from heterogeneous sources and diverse spatial and time scales. Data analytics employs theories, methodologies, and tools drawn from many fields, within the broad areas of mathematics, statistics, and computer and information sciences, and applies them to a diversity of data-rich domains, such as life sciences, medicine, physical sciences, social sciences, engineering, business, and education.

Data analytics is a very broad and multifaceted field. The Computational Analytics emphasis will enable students to address analytics problems that are associated to large quantities of data, to discover new knowledge and support decision making. To accomplish this, the PMCDA program will provide students with a strong foundation in data management and analysis, the computational and statistical thinking, and understanding of computer systems. The program will provide its graduates with the necessary skills to succeed in data science-related jobs, which require the integration of data analysis skills, ability to deal with large quantities of data, and a solid foundation in computing. The professional focus of the degree will prepare students for success in the workplace, with an emphasis on enriching the preparation of students who are already in the workplace and are seeking technical skills to advance their careers in the data analytics domain.

After completing the PMCDA program, students will have gained the skills and ability to:
- Analyze real-life data from diverse sources and domains
- Effectively apply analytics tools to large data sets
- Apply mathematical and statistical models to data analysis problems
- Apply computational thinking to develop effective data analytics solutions
- Apply programming and debugging skills to problem solving
- Understand and use computer technology and software in solving real-life data analysis problems
- Understand and address unfamiliar problems related to data analytics
- Develop effective instrument to communicate solutions to diverse audiences

2 Purpose and Mission of the Program
2.1 Overview of the Proposed Program
The terms "big data" and "data analytics" are frequently used to describe the challenges, techniques and methodologies used to deal with the vast amounts of data currently being generated and analyzed in many areas of science, education, business and government. In 2013, IBM estimated that over 2 million terabytes of data are created every day - equivalent to over 300 million high definition movies. The National Security Agency gathers as much information as is stored in the Library of Congress every 6 hours. Over 90% of the world’s data was generated in just the past two years.
Making sense of this vast sea of data for the use and benefit of society is an imperative; indeed higher education institutions and companies are already strategizing and restructuring for this "big
data” tsunami. The ability to extract information from these data sets, and in turn convert the information into knowledge, has already led to ground-breaking advances in a wide variety of domains, ranging from genomics, to financial trading, to high-energy physics and education. Data analytics is supporting the development of new information-based industries – according to a recent report from International Data Corporation (IDC), this represents a market estimated at $130 billions and expected to grow to over $203 billions by 2020 [6].

Techniques to support big data are traditionally grounded in the field of computing – computational methods are essential to process the data sets whose size is in the order of terabytes and beyond. Until recently, methods of analysis of these data had largely assumed that “traditional” computing inferential tools are adequate to summarize and make informative inferences from the data. With the increased capacity to collect, store and summarize data, and with the growth in the level of sophistication of the questions that we seek to answer, it is becoming clear that data analytics requires skills that go beyond the mere application of tools, skills that can be developed through specialized training in data management and data analytic skills. Data analytics and data science have emerged crucial interdisciplines for developing solutions for gathering, cleaning, archiving, analyzing, using and visualizing data for the purposes of making informed decisions. A popular report by McKinsey Global Institute [8] estimates that, by 2018, the US could face a shortage of close to 200,000 people with deep analytic skills, and 1.5 million analysts will be needed with the expertise to translate the analysis of available data into actionable decisions. The “deep analytic skills” expected are primarily driven from tools, skills, methodologies, and techniques that come from the disciplines of Computer Science, Mathematics and Statistics.

A recently published report [2] by Burning Glass Technologies, Business-Higher Education Forum (BHEF), and IBM states that “the demand for data scientists will soar 28% by 2020”. A report at Burch Works, a leading executive recruitment agency that matches top Big Data & Data Science talent with top jobs [4] emphasized three key trends that shape 2017 data science hiring. Among these three key trends, one of them is “More early career data scientists opting for Master’s degrees, not PhD’s.”

The mission of the proposed degree program is to produce trained professional with deep analytic skills, by drawing on these core disciplines. The core courses of the Professional Master in Computational Data Analytics (PMCD) program come primarily from statistics and computer science, but the program also recognizes that some of the skills necessary for big data and data analytics come from the needs and applications in specific domains; the program includes advanced courses and culminating experiences that enable students to apply their analytics skills to problems in a specific domain.

2.2 Program Description

We propose this new degree program in response to this exploding “big data” industry sector. New Mexico State University is well-positioned to deliver such a degree because of existing resources - including faculty members (e.g., the solid expertise of the Applied Statistics department, the focused hires conducted in Computer Science), computer equipment, curriculum and courses – within existing colleges and departments.

The program provides a progressive exposure to computational data analytics:

- The foundational layer provides training in the statistical and computational skills that underlie data analytics
• The **methodology layer** explores the tools, techniques and methodologies that are commonly employed in data management, data mining and machine learning
• The **advanced layer** provides a range of electives to explore advanced methodologies in data analytics and their use in diverse domains
• The **capstone experience** allows students to apply their skills and knowledge to solve a real-world problem

### 2.3 Academic Objectives

The primary academic purpose of this professional degree program is to develop professional workforce that is prepared to address the needs in the rapidly expanding computational data analysis field. The students will be educated to work and excel in a variety of work settings, including private corporations, national laboratories, government and educational settings. By educating these students we will be supplying qualified workforce to an industry which is currently looking for cost-effective ways of delivering more effective decision making based on diverse and heterogeneous data sets.

The primary academic objectives for this proposed new degree program will be the development of high level skills in:

• Identifying and defining problems and decisions that can be answered by data
• Acquiring, analyzing and exploring data
  • Acquiring: getting, cleaning, archiving, integrating data
  • Analyzing: visually, mathematically, statistically
  • Exploring: seeking trends and patterns
• Managing and communicating data narratives (stories) that transform data into actionable information
• Exposure to real-world problems, through applied course in different disciplines and exploring partnerships with industry and national labs involving big data and data analysis.

### 2.4 Program Curriculum

#### 2.4.1 Curriculum

The admission requirements for the degree program will require incoming students to have a minimum mathematical preparation at the level of *Linear Algebra* (MATH 280 or equivalent course, such as E E 200).

The curriculum for the degree program is composed of 34 graduate credits. The degree requirements are articulated in three phases:

1. **Foundational**: The background courses are aimed at developing the necessary computing and mathematical background to operate in the domain of data analytics. The following courses are required:
   a. **Programming Foundations**: [6 credits]
      • Programming R:
        • CS 458 or A ST 515 for students with low computing background
        • CS 459 for students with existing computing background
      • Programming in Python:
        • CS 453 for students with low computing background
        • CS 454 for students with existing computing background
b. Mathematical Foundations: [7 credits]
   - Statistical Inference and Regression:\(^1\)
     1. A ST 505 and
     2. A ST 507

2. Methodologies: [9 credits] The foundation courses provide the preparation in the basic methodologies and technologies needed for data analytics.
   a. Database Management Systems: ICT 458 or CS 502 or BCIS 575
   b. Data Mining: CS 508 or A ST 550
   c. Machine Learning: CS 519 or EE 565

3. Advanced Topics and Applications: [9 credits]
   a. Multivariate Analysis: A ST 555
   b. Advanced Mathematical Modeling: MATH 518, STAT 535
   c. Data Analysis: IE 590, IE 545, BCIS 561
   d. Modeling and Simulation: CS 512, IE 567, IE 515, IE 522
   e. Communication: COMM 550, ENGL 543
   f. Visualization: CS 506, ICT 460
   g. Predictive Analytics: BCIS 566
   h. Enterprise Systems: BCIS 585
   i. Advanced Data Management: CS 582
   j. Applications:
      - Astronomy: ASTR 630
      - Biology: BIOL 566
      - Electrical Engineering: EE 596

4. Capstone Experience: [3 credits]
   a. Internship, or
   b. Master’s Project or Thesis: CS 598 or EE 598 or IE 599 or MATH 599 or A ST 598

2.4.2 Learning Outcomes
Upon successful completion of this program, graduates will be well positioned to find employment in the burgeoning data science and analytics industry. This will be an interdisciplinary degree drawing on faculty from various colleges (Arts and Sciences, Business, Engineering) and programs (e.g., applied statistics, mathematical sciences, computer science, industrial engineering, electrical and computer engineering, astronomy, criminal justice).

Learning outcomes for each of the individual courses will be provided by the instructors of the course, who will have the primary responsibility to see that these outcomes are achieved. The overall goal of the Computational Data Analytics programs is to equip quantitative professionals with the tools to gather, analyze and interpret data collected on scales up to terabytes (10\(^{12}\) bytes) or even petabytes (10\(^{15}\) bytes). Upon completion of the PMCDA program, students will be able to:

1. Define problems to be addressed through data analysis techniques

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\(^1\) Students with prior training in statistical methods through advanced regression may opt to replace with the sequence STAT 470 and STAT 480 or with the sequence A ST 565 and A ST 566.
2. Describe and apply the basic principles of statistical inference and commonly used statistical models, data mining, machine-learning tools, and database tools.
3. Select appropriate statistical and computational methods and apply analytical skills to effectively summarize, visualize, and make valid inferences from data.
4. Describe, analyze, apply, and use databases, data mining and machine learning tools.
5. Fit and evaluate simple and multivariate linear regression models and generalized linear models.
6. Perform appropriate analyses on time-series data and multidimensional data.
7. Show proficiency in R, Python, and database programming.
8. Communicate quantitative results to individuals who may not have expertise in either statistics or computer science.
9. Apply essential database skills such as storing, organizing and manipulating large amounts of data contained in databases.
10. Perform data collection, cleaning (e.g., harmonize, rescale, parse, convert) and data imputation.
11. Articulate principles of statistical and data ethics.

Although students will undoubtedly learn other technologies (e.g., Excel, HTML, CSS, JavaScript) within this master's degree they will become expert in the following technologies since these are pervasive in the data science industry:
- An operating system of choice for data science (initially this would be Linux)
- A high level scripting language for quantitative data manipulation and visualization (initially Python)
- A high level programming tool for statistics and machine learning (initially R)

These Learning Outcomes will be assessed with a focus on coursework learning outcomes, final capstone project, data analysis outcomes, testing, conformance to best practices, student portfolios, class presentations and a variety of evaluations. Exit surveys will be carried out with all students upon finishing the program.

3 Program Justification

3.1 Need for the Program

The McKinsey Report suggests that by 2018 in the USA the data science industry will face a shortage of professional workforce of close to 200,000 people. A search of any of the large job websites (such as simplyhired.com) reveals hundreds of current openings in data science. In terms of compensation, recent studies [7, 3] report:
- Data scientists who are managers make considerably more than those who are individual contributors, but for both, compensation increases significantly with scope of responsibility and years of experience.
- The median base salary is between $87K and $91K. The median salary raises to $106K if we focus on US jobs only.
- Salaries are changing at a rapid pace; a 2016 study indicates that half of the sample witnessed a 20% change, and the salary of 12% of the sample doubled.
- The highest median salaries belong to those who code 4–8 hours per week; the lowest to those who don’t code at all.
Another telling sign regarding the need for this type of program is the nationwide proliferation of graduate programs, primarily at the Master’s level, in data analytics, data science, and programs with similar titles, aimed at preparing professionals to deal with large and diverse data sets. Some of these programs have acceptance rates below 15%. In response to the increasing demands on techniques and skills of big data analytics, almost every US state has supported Master’s degrees in different universities [1]. However, according to Master’s in Data Science [1], in New Mexico, there is no official Master’s degree on big data and data analytics. Enrollment in relevant courses at NMSU has been growing steadily over the years. The overall enrollment in the relevant AStat and CS courses has increased from 119 in Fall 2013 to 152 in Fall 2016.

A market analysis conducted in 2013 by the Department of Statistics of Oregon State University found that about 90% of students in certificate programs focused on Data Analytics were currently employed, in professional, scientific, technical services, educational services, insurance providers and health organization. Many of such students are pursuing such studies to acquire new skills to transition into a new functional area. Data Analytics has gained traction over traditional statistics and applied mathematics programs; at Colorado State University, for example, there were twice as many inquiries regarding “data analytics” as for “applied statistics.” The popularity of the concepts can be seen even in simple popularity web searches (Figure 1).

According to a very recent ACM Computing Survey on data science [5], about 500 subjects of courses are related to data science or analytics. Among these courses, about “72% are offered at Master’s level, with only 7% at bachelor level, and 3.6% at the doctoral level”. It shows that a Master’s degree on data analytics could be easily fit into the current educational system. When it comes to the media of offering such courses, online courses significantly complement the traditional education systems. For example, there are increasing number of courses offered in the Massive Open Online Course (MOOC) mode such as Coursera and Udemy.

Data science can be applied to almost every area that generates, collects, analyzes, and stores data. This program will prepare students working in the application areas that demand for professional skills of big data analytics. In particular, such application areas include biotechnology, energy, finance, gaming and hospitality, government, health care, insurance, internet, manufacturing, pharmaceuticals, retail, telecommunications, travel and transportation, and utilities. We can summarize the top skills required for data science positions by going through the requirements for such positions (at different levels) at different hiring websites. The top skills include machine learning, data mining, statistical analysis, Python, R, Support Vector Machine (SVM, one type of machine learning algorithms), k-Nearest Neighbor (kNN, one type of data mining/machine learning algorithms), MapReduce, and SQL. The levels of the positions generally depend on the years of work experience in the area and the levels of degrees. Most entry-level positions require 0-2 years of work experience in those areas and a Master’s degree. While the middle-level or senior positions require more years of experience or higher degree (Master’s or doctoral degrees). Given the requirement from employers at the hiring websites, our program will train students who would like to get entry-level or middle-level data science positions by covering the majority of the required professional skills.

The research results of different reports and surveys also echo the necessity of a canonical set of skills and techniques. Most online courses cover the classical subjects such as statistics, data
mining, machine learning, prediction, database management, and newer knowledge including analytical languages such as R and Python, and cloud infrastructure MapReduce and Hadoop [5]. As shown in Figure 2, the MGI 2016 report [9] lists the major techniques, which are machine learning centered and are combined with other analytical skills.

Figure 1: Popularity of Data Science
3.2 Relationship to NMSU Mission

The proposed program will have direct relevance to several of the Vision 2020 goals and values. The Vision 2020 document [10] lists the following core values:

1. Diversity and Inclusion: The proposed degree program will build on a wealth of expertise in the area of broadening participation and accessibility in STEM and computing. The proposed degree program will be accessible to a broad audience with diverse backgrounds, and it will contribute to the diversification of the workforce in the area of data analytics.

2. Accountability: Precise quantitative and qualitative metrics will be established to provide effective and ongoing monitoring of the program. Separate metrics will be developed to:
   a. Assess implementation and deployment of the degree program
   b. Assess learning outcomes of students, acquisition of critical data analytics skills, and students’ access to rewarding careers relevant to computational data analytics.

3. Excellence: The program will meet the highest educational standards, reflecting the cutting-edge in principles, methodologies and technologies in the areas of computational data analytics. The program will contribute to promoting the educational and research profile of the institution.

4. Discovery: The degree program will build on a range of ongoing research efforts at NMSU in the areas of computational sciences and data analytics, bringing cutting-edge
techniques and methodologies to the students. In turn, students will have the opportunity of contributing to research projects through course projects, capstone projects, and internships in NMSU research labs.

5. Engagement: the degree program will benefit local communities, by bringing challenge problems suggested by local organizations into the classrooms in the form of class projects.

The specific goals from Vision 2020 that will benefit from the PMCDA program are:

- Academics and Graduation:
  - (KPI 1) Enrollment Growth: the program addresses a focus area of growth and high demand; we expect the program to attract an audience that would currently not consider NMSU as a viable academic option – especially professionals in the workplace.
  - (KPI 2) Graduate Enrollment: the program will be a graduate program at the Master’s level, thus promoting increase of graduate enrollment.
  - (KPI 8) STEM-H-B Degrees: the areas of Data Analytics and computational data science are at the core of STEM – being grounded in computer science, mathematics, and statistics. Thus, the PMCDA will provide a new avenue for NMSU to generate STEM-H-B degrees.

- Diversity and Internationalization:
  - (KPI 10) Diversity: the design of the program will build on pedagogical practices developed over the years by the Computer Science department to broaden participation of students from traditionally underrepresented groups in computational sciences. This will have a goal of promoting diversity among the PMCDA students.
  - (KPI 11) International Presence: the PMCDA program will integrate topics and perspectives drawn from ongoing research efforts that rely on international collaborations (e.g., Italy, Germany, Japan, Spain). Students in the program will have the opportunity to meet and interact with international researchers.

- Research and Creative Activities:
  - (KPI 15) Publications and Creativity: the PMCDA program will build on a wealth of research activities in the areas of data science, computer science, and data analytics. Students in the program will have the option of participating in research activities (e.g., as part of their capstone experience) and contribute to discoveries resulting in scientific publications.

- Economic Development and Community Engagement
  - (KPI 16) Student Innovation: the computational data analytics domain is ripe for new discoveries, especially in terms of
    - Exploring applications of computational data analytics methods to novel application domains
    - Exploring how computational data analytics techniques can be advanced to meet the challenges of new application domains.

These innovations will be led by students as part of their graduate coursework and promoted through existing entrepreneurial avenues (e.g., Arrowhead).
○ (KPI 18) Community Engagement: the program will include the opportunity for students, as part of their capstone experience to engage in service learning projects, applying data analytics techniques to the aid of community organizations (e.g., analysis of needs of local shelters based on historical data).

○ (KPI 20) Career Placement: as discussed earlier, the workforce demand in the field of applied and computational data analytics is booming. The program will develop collaborations with potential employers to facilitate placement of students upon graduation.

3.3 Relationship to Other NMSU Programs
The PMCDA program is novel and does not represent a duplication of any existing program at NMSU. Nevertheless, the program builds on capacities provided by some existing programs:

- **Computer Science**: the Computer Science programs have expanded in recent years their emphasis on computational methods for data analysis and big data. It provides courses and expertise in database management systems (which is a required area for the Bachelor of Arts in Computer Science), high performance computing, data mining, and machine learning.

- **Applied Statistics**: the program has expanded its expertise in data analysis and mathematical modeling.

- **Industrial Engineering**: the program has developed expertise in data analysis, statistical analysis and data driven decision making.

- **Electrical and Computer Engineering**: the program provides extensive expertise in machine learning and applications (e.g., in signal processing).

- **Mathematical Sciences**: the program provides expertise in basic fundamental mathematical knowledge, mathematical modeling and analysis.

The proposed program is integrative, as it builds on expertise and capacity available across multiple departments in multiple NMSU colleges.

3.4 Relationship to Programs Offered at Other New Mexico Universities
The proposed professional degree program does not represent a duplication of any degree existing degree program offered within New Mexico. The University of New Mexico offers a data analytics concentration within the MS in Information Systems, with emphasis on business applications and data mining/management. Coverage of machine learning and computational methods is very limited. New Mexico Tech does not appear to offer any comparable program.

3.5 Relevant Degree Programs at Peer Institutions

- University of Arizona is currently developing an undergraduate certificate in Data Analytics and Visualization; no comparable graduate programs are offered

- Colorado State University: does not offer any comparable degree program

- University of Idaho: does not offer a comparable degree program

- Iowa State University: offers a Master in Business Analytics, with a greater emphasis on business applications, limited computational aspects, and exclusive focus on big data and data mining (and not machine learning)

- Kansas State University: the only relevant program is a graduate certificate in Data Analytics (15 credits)
• Montana State University: does not offer a comparable program
• University of Nevada-Reno: offers a PhD program in Statistics and Data Science, with a greater emphasis on theoretical and research aspects.
• University of Nebraska-Lincoln: offers a Business Analytics certificate, focused on business professionals and with limited computational coverage.
• University of North Texas: offers a MS degree in Business Analytics, requiring a background in business management and accounting and with emphasis on business applications and data management.
• Oklahoma State University: offers a MS degree in Business Analytics with a good coverage of data mining and programming. It has a strong emphasis on business applications and no coverage of machine learning methods.
• Oregon State University: offers a comprehensive MS degree in Data Analytics, more extensive and advanced with what proposed by NMSU (45 credits)
• University of Texas at El Paso: offers a Graduate Certificate in Data Analytics, with an exclusive emphasis on the mathematical and statistical aspects.
• Texas Tech University: offers a Master's degree in Data Science, but the catalog does not provide a description of the structure of such degree program
• Utah State University: does not offer a comparable degree program
• Washington State University: offers a comprehensive Bachelor degree in Data Science.
• University of Wyoming: offers a Big Data concentration within the Computer Science undergraduate program (focused exclusively on Computer Science majors).

4 Clientele
4.1 Student Characteristics
4.1.1 Students to be Served by the Program
The program will serve a mixed audience composed of
• Traditional on-campus students dedicated to pursuing the degree in a full-time manner
• Professionals in the work-place, pursuing the degree part-time and adapted to the needs of their employers.

We anticipate that in the long run most of our students will be professionals who are looking to add more data analytic tools to their workplace and/or who are seeking advancement or transition to a new functional area. We expect to have both full- and part-time students in the program.

4.1.2 Basic Entry Requirements
All applications for admission in the program will be reviewed by the Director of the program. After an initial screening, the recruitment committee will review applications. Applicants must meet the minimum requirements for admission to the Graduate School (e.g., have completed an undergraduate degree at an accredited institution), and they must have at least one undergraduate course in basic statistics (e.g., equivalent to STAT 251) and a course on linear algebra (e.g., equivalent to MATH 280). Each applicant will be required to provide a statement of interest and three reference letters.

4.1.3 Equitable Representation
We will market the program broadly to help ensure diverse cohorts of students. Given the diversity of students in the NMSU undergraduate student population, we will encourage students NMSU
students to consider PMCDA as an option. We will also work with relevant undergraduate programs (e.g., Computer Science, Mathematical Sciences, Electrical and Computer Engineering, Industrial Engineering) to develop Masters Accelerated Programs that feed into the PMCDA program. We will make additional efforts to market the program in the private sector and in national labs, military installations and other federal and state facilities.

The Department of Computer Science has a long-standing commitment to serve a very diverse student population. NMSU-CS has launched and supports a wide range of initiatives to promote recruitment, training, and retention of students from traditionally under-represented backgrounds. These projects include outreach programs (e.g., summer camps for middle-school and high-school students), training and motivational events (e.g., a year-around set of activities for cohorts of high-school women), and solid links with local high schools and community colleges, and collaborations with Hispanic-Serving Institutions across the nation (e.g., NMSU is one of the leading institutions in the Computing Alliance of Hispanic Serving Institutions).

It is important to underline the importance of the development of this type of program in a region like New Mexico. The field of computing is still witnessing a severe under-representation of women and of students from traditionally under-represented ethnic groups. In particular, less than 30% of computing Master’s degrees are of women; only 1.8% of Master’s degrees in computing disciplines are awarded to Hispanic students and only 0.2% are awarded to Native American students [11]. The diversity in the population of New Mexico offers an untapped pool of talent on which to build a successful and strong program, laying the foundations for bringing New Mexico to the forefront of training in computational data analytics.

Our program will attempt to address the problem of participation of students from underrepresented backgrounds in graduate studies. We propose to tackle this issue by investing special effort in targeting these students during the recruitment activities. First of all, a significant percentage of our own undergraduate students (over 50%) belong to minority groups. Within these segments of our population there are exceptionally talented students. NMSU is also geographically well-positioned to adequately serve a population with a significant presence of Hispanic and Native Americans. The departments involved have also strong ties with a number of universities and colleges with a predominantly minority population, who will provide another potential pool of talented applicants; we will actively advertise our program at these institutions (during our regular visits). NMSU is part of an Alliance to promote training of Hispanic students in Computing disciplines; this partnership provides resources and a wide network to advertise the program and recruit excellent students from the other partner institutions. Recruitment activities will include visits to other minority-serving colleges and universities, advertisements, presentations, and wide promotion on social media.

### 4.2 Projected Enrollment

The following table provides a conservative estimate of projected enrollment in the program for the first five years of activity. The figures have been estimated using an internal study of interest in data analytics between existing graduate students, observations of enrollment trends in other data analytics programs. The program will also target a number of part-time students drawn from local industries and research facilities in the area.

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-Time</th>
<th></th>
<th>Part-Time</th>
<th></th>
<th>Completion Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New</td>
<td>Return</td>
<td>Total</td>
<td>New</td>
<td>Return</td>
</tr>
<tr>
<td>Year 1</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Year 2</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>
We aim at attracting a sustainable enrollment of about 40 students, with an annual new cohort of about 20 students. We expect to see applications from individuals currently working within a wide variety of economic sectors and industries in the region, due to the interest in data science and data-driven decision making across many economic sectors.

5 Institutional Readiness

5.1 Faculty Resources

The institution has already an adequate pool of qualified researchers and educators to meet the needs of the proposed degree program. The following is a description of the faculty members and their role in the program:

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Areas of Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlotte Gard</td>
<td>Applied Statistics</td>
<td>Statistical Analysis, Data Mining, Risk prediction modeling, Health applications</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>A ST 505, A ST 555</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Assistant Professor (FTE: 1.0)</td>
<td></td>
</tr>
<tr>
<td>William Gould</td>
<td>Applied Statistics</td>
<td>Sampling and estimation of fisheries and wildlife populations, ecological and biological modeling</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>A ST 505, A ST 550</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Associate Dean</td>
<td></td>
</tr>
<tr>
<td>Christopher Sroka</td>
<td>Applied Statistics</td>
<td>Models for count and categorical data, Hierarchical Bayesian models, Simulation</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>A ST 550</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>David Daniel</td>
<td>Applied Statistics</td>
<td>R Programming</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>A ST 507, A ST 515</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Associate Professor</td>
<td></td>
</tr>
<tr>
<td>Enrico Pontelli</td>
<td>Computer Science</td>
<td>High Performance Computing</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>CS 458, CS 453,</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Professor and Dean</td>
<td></td>
</tr>
<tr>
<td>Son Cao Tran</td>
<td>Computer Science</td>
<td>Reasoning, Knowledge representation, knowledge-bases</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>CS 502, CS 506</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Professor and Department Head</td>
<td></td>
</tr>
<tr>
<td>Huiping Cao</td>
<td>Computer Science</td>
<td>Databases, Data Mining, Big Data</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>CS 502, CS 508, CS 519</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Associate Professor</td>
<td></td>
</tr>
<tr>
<td>Zachary Toups</td>
<td>Computer Science</td>
<td>Visualization, Human-Computer interaction</td>
</tr>
<tr>
<td>Courses in the program:</td>
<td>CS 506, CS 454</td>
<td></td>
</tr>
<tr>
<td>Rank:</td>
<td>Assistant Professor</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Department</td>
<td>Field</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Parth Nagarkar</td>
<td>Computer Science</td>
<td>Databases, Big Data</td>
</tr>
<tr>
<td>Inna Pivkina</td>
<td>Computer Science</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>Laura Boucheron</td>
<td>Electrical and Computer Engineering</td>
<td>Machine Learning, Signal Processing</td>
</tr>
<tr>
<td>Phillip De Leon</td>
<td>Electrical and Computer Engineering</td>
<td>Signal Processing, Machine Learning</td>
</tr>
<tr>
<td>Talayeh Razzaghi</td>
<td>Industrial Engineering</td>
<td>Data Mining, Machine Learning</td>
</tr>
<tr>
<td>Alla Kammerdiner</td>
<td>Industrial Engineering</td>
<td>Application of data mining to health care, biomedicine and human factors</td>
</tr>
<tr>
<td>Jameson Cahill</td>
<td>Mathematical Sciences</td>
<td>Applied mathematics, Analysis</td>
</tr>
<tr>
<td>Joe Lakey</td>
<td>Mathematical Sciences</td>
<td>Harmonic analysis, discrete dynamic systems</td>
</tr>
<tr>
<td>Tonghui Wang</td>
<td>Mathematical Sciences</td>
<td>Bootstrap methods, multivariate analysis, and linear models in statistics</td>
</tr>
<tr>
<td>Jennifer Kreie</td>
<td>Accounting and Information Systems</td>
<td></td>
</tr>
<tr>
<td>Carlo Mora-Monge</td>
<td>Accounting and Information Systems</td>
<td></td>
</tr>
</tbody>
</table>

Although *big data, data science and data analytics* have exploded most rapidly in the business, marketing and healthcare sectors, data science is a pervasive discipline, and therefore it is crucial that the proposed program is interdisciplinary in scope. It is important that its delivery and administration is shared among schools and includes faculty with relevant, applied experience who
represent the different “data using” organization types that the degree serves. Current leaders will also be included as guest lecturers or speakers.

5.2 Library and Curricular Resources
The library provides adequate support for the initial needs of this program. The library provides access to the Digital Library of the Association for Computing Machinery (ACM), which supports the most reputed conferences and journals in Computer Science.

The Department of Computer Science, under the auspices of the NSF CREST grant, has hired a full-time program coordinator who will help with the task of publicizing the program and coordinating the recruitment efforts.

5.3 Physical Facilities
The proposed program does not require any dedicated physical facilities. Nevertheless,

- The general computer laboratory (SH 118) and the graduate laboratory (SH 169) in the Computer Science Department are available to provide computational facilities for students in the program.
- The Business Complex Computer Lab houses 62 Windows-based computers. A variety of software is available including Microsoft Office 2016, R, RStudio, SAS 9.4, MATLAB, Tableau, Desktop GIS, TSP (econometrics software), MiKTeX, and Oracle SQL Developer and SQL Developer Data Modeler. The lab is equipped with two scanners and a webcam and microphone.

5.4 Equipment and Technology Resources
The courses in the program will make exclusive use of public domain and freely available software infrastructures. An existing National Science Foundation award will also provide a computing server that will be dedicated to the needs of this academic degree program – by providing storage space and installation of software (e.g., R, Python, database systems, machine learning frameworks) for the needs of the students in the program. Access to the server and its resources will be restricted to students admitted in the program and registered for courses in the program.

5.5 Administrative Structure
The proposed degree program will be an inherently interdisciplinary program. The academic governance will be by an Executive Committee consisting of the Deans (or their designated representatives) of the Colleges of Arts & Sciences, Engineering, and Business. The Executive Committee is designed to provide overall interdisciplinary program and operational review. It will determine and review the Program’s policies and procedures.

The program will exist independent of any department, but will draw on faculty from participating departments. The program will be led by a Program Director, who will be a full time (9 month) tenured (or tenure track) faculty member. The Director will report to the Executive Committee on curriculum matters, manage the recruitment and admissions process, develop and maintain relationships with other relevant degree programs, maintain connection with industry and government entities to facilitate internship opportunities, teach in the program, chair the program’s curriculum committee, implement and maintain courses, and report annually (or more frequently if necessary) to the Executive Committee. Because it is an interdisciplinary program the nexus of both operational and organizational structures will be with the Graduate School. The following chart outlines the governance structure.
6 Summary of Costs and Benefits

The proposed program should incur minimal new costs as almost all elements of the proposed program are already in place. The courses required to complete the program are already listed in the graduate course catalog and are being offered by various departments on a regular basis. We anticipate that graduate student assistance will be needed with the course instruction. We anticipate that we will need two graduate assistants to help with the instruction of the courses. Initially, this support for the assistants will come from the external grants that are already in place. The $5 million CREST (Center for intelligent technologies for smartgrids) grant that started in 2014 and will run through at least 2020 provides support for about 10 graduate assistants per semester. Some of these students will help with the instruction of the courses. We anticipate that the CREST grant will be funded for another five year period. However, in the case that the CREST grant is not renewed, NMSU will provide the support for the two additional GAs needed to support instruction of the courses required for the program (commitment from the College of Arts & Sciences).

6.1 Projected Costs

We do not anticipate any substantial costs to start-up the program. Below we provide a brief analysis for each of the required categories.

6.1.1 Additional faculty needed for the program

As stated earlier, the faculty needed for the program is already in place. The idea and planning of a Masters degree in Computational Data Analytics has been going on at NMSU for a while. One new faculty member, Dr. Parth Nagarkar (Computer Science), with expertise in Data Management was hired in 2017, joining an existing cadre of faculty members dedicated to this discipline. We anticipate that at least one additional faculty member will be hired over the next year who will strengthen the program – specifically, bringing expertise in data visualization and presentation. However, the development of the program is not contingent upon these additions.
6.1.2 Additional library resources needed for the program.
The proposed program is a Masters program. Hence the need for additional library resources is not as extensive as it might be for a new doctoral program. The library resources as they exist are adequate for the proposed program. The library has substantial holdings in computer science and related disciplines. Almost all research materials that might be needed for the program are accessible through Web resources or inter-library loans. Furthermore, there is a wealth of materials that is freely available online, and faculty members are used to prioritize public domain materials in their courses.

6.1.3 Additional facilities, equipment and technological resources
We believe that the existing facilities, equipment and technological resources are sufficient for the program. The Computer Science department has a graduate computing lab and significant computing resources to support all additional computing needs of the program. Additional equipment (e.g., one new server, several new workstations) will be added to these facilities in 2018 through existing funding from the National Science Foundation. While this will strengthen the training component of the MS program, the existence and continuation of the degree is not contingent upon the setting up of the lab.

6.1.4 New graduate assistantships needed to support the program
Two new graduate assistantships will be needed to support the program. As indicated earlier, there are significant existing external grants at NMSU that will mitigate the cost of the program for several years initially. We anticipate that we will not need any additional graduate assistantships for at least the first three years. Thereafter, we still anticipate that external grants will fund the two additional assistants needed to support the instruction of the program courses.

6.2 Projected Benefits
6.2.1 Financial Benefit
The following table illustrates the total revenues in terms of tuition and fees conservatively estimated based on an average enrollment of 18 credits per year for full-time students and 12 credits per year for part-time students, for in-state students ($291.3 per credit hour in tuition and fees).

<table>
<thead>
<tr>
<th>Year</th>
<th>Full-Time</th>
<th>Part-Time</th>
<th>Tuition and Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Return Total</td>
<td>New Return Total</td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>5 0 5</td>
<td>0 0 0</td>
<td>$26,217</td>
</tr>
<tr>
<td>Year 2</td>
<td>5 5 10</td>
<td>4 0 4</td>
<td>$66,416</td>
</tr>
<tr>
<td>Year 3</td>
<td>10 5 15</td>
<td>5 4 9</td>
<td>$110,111</td>
</tr>
<tr>
<td>Year 4</td>
<td>10 10 20</td>
<td>5 9 14</td>
<td>$153,806</td>
</tr>
<tr>
<td>Year 5</td>
<td>10 10 20</td>
<td>10 10 20</td>
<td>$174,780</td>
</tr>
<tr>
<td>Year 6</td>
<td>10 10 20</td>
<td>10 10 20</td>
<td>$174,780</td>
</tr>
</tbody>
</table>

6.2.2 Benefits to the State of New Mexico
Benefits to the NMSU System: The very nature of data analytics cuts across academic disciplines, allowing for diverse interdisciplinary collaborations and expanded potential for discovery. The proposed degree structure allows for future growth, by adding concentration areas to meet the analytics needs of different disciplines. This will enable new collaborations not only within the institution, but also business, industry, and government. The proposed degree will help create a community of faculty from Computer Science, Engineering, Applied Statistics, Mathematics,
Business, Education, and other disciplines dedicated to big data and analytics and interested in graduate level Data Analytics and Analytics education. At present there is no locus for interaction related to graduate level data analytics education within the NMSU system.

**Research, Teaching, and University Benefits:** The proposed PMCDA program provides a number of positive benefits to NMSU. For example, this program will lay the academic foundations and the institutional commitment necessary to recruit highly skilled data scientists for university oriented business development. Bringing data analytics to the NMSU campus would provide a significant competitive advantage for New Mexico’s business and industry, state agencies, national laboratories, and universities, and thus enhance the state's economic development.

To achieve these benefits, we will develop an online clearinghouse for matching research and practical projects with students in the PMCDA program – to be used as part internships and culminating experiences for the students in the program. The aim is to bring computational data analytics capabilities to campus wide activities.

**Educational Benefits to New Mexico’s Students:** An essential component of the PMCDA program is a sequence of courses aimed at providing students with a specialization/emphasis. This offers in-depth analyses and training on data analytic techniques, issues, and problems students will face within a given concentration area. Students will have the opportunity, within such concentration, to gain hands-on experience with large and complex data sets and use cutting-edge computational analytics techniques. During such courses, the students will benefit from the direct mentoring from faculty, as well as insight from industry partners.

The proposed degree, with its professional structure, will prepare students with different backgrounds to become productive data scientists in New Mexico and regionally connected laboratories, government, and industries. The PMCDA program reflects, in its interdisciplinary structure, the diversity of the emerging field of data science by offering emphases in several different disciplines in advanced data science involving big data. The degree has a professional structure, with an estimated time to degree of four (full-time) to six (part-time) semesters, with an approximate total cost of $xxxxx.

7 Assessment of Operations and Impact

The program will conduct regular assessments of learning outcomes and report its findings on an annual basis to the executive committee, the Dean of the Graduate School and the Provost. We will collect reliable direct and indirect evidence of student learning, and ensure that assessment closes the loop, leading to improvements in the curriculum, teaching methodologies and learning outcomes.

The proposed degree program will align its curriculum so that it will be consistent with the learning objectives highlighted in the earlier sections of this document. The learning outcomes will be assessed with a focus on coursework learning outcomes, research projects/internship outcomes, data scripting outcomes, testing, conformance to best practices, student portfolios, surveys, class presentations and a variety of evaluations.

7.1 Evaluation and Assessment

The faculty involved in the PMCDA program will follow the assessment standards for graduate education at NMSU, using the guidelines established by the Annual Academic Departmental Assessment of Student Learning. The program faculty will assess the intellectual development and
learning outcomes of students through various formative and summative means at the course level and at the program level. A mixed-method program assessment approach will employ direct and indirect assessment measures and will be used to inform pedagogical, structural, and learning outcome modifications as the program matures.

- **Direct Measures**: The PMCDA program will review all students' deliverables (e.g., course projects, sample of course student work, portfolios, research projects) with rigorous intellectual engagement of students as a primary consideration. Exams/tests, papers, projects, presentations, portfolios, etc. will capture what students actually learn and their mastery of these skills. The executive team will work with course instructors in developing and deploying standard assessment rubrics.

- **Indirect Measures**: During the initial years of operation, the program will use outside summary reports developed by an evaluation team, assembled by the Graduate Dean and coordinated through the NMSU Office of Assessment. The summary reports will assess the alignment of essential and important objectives with the stated objectives of the program. Additionally, the evaluation team summary reports will allow for a review of students' perception of their progress, the rigor of the courses, and the pedagogy that faculty used in comparison to the interdisciplinary and college norms. All PMCDA graduates will complete an exit survey to assess both the processes and the outcomes of their courses and their interactions with faculty and fellow students. Other indirect measures such as surveys, interviews, and aggregate reports on retention, graduation, and placement will be utilized.

The Director of the PMCDA program will lead appropriate process assessments to fine-tune the operation and provide guidance and adjustment to course instructors and curriculum developers. Evaluation and assessment of the program will follow the established processes for Outcome Assessment in place at NMSU.

**Summative evaluations** will include surveys of continuing and graduating students that will be conducted each year, along with faculty evaluations and input from the previously mentioned evaluation committee. This committee will overview curriculum and the admissions process. A focus group approach will be conducted each year with graduating students and one year alumni. The focus groups will determine student perspectives on the curriculum and instruction. The alumni will provide feedback on job readiness and workforce experience. Employment placement of students and their rate of compensation will be key indicators of program quality. Employers will be surveyed periodically to ascertain their views of the programs and to aid in determining what skills should be emphasized (or not) in the curriculum.

**Formative assessment** will include student coursework, drawn from Canvas completed submissions, and portfolio reviews. Faculty will meet once a year to review student progress and quality, and provide progress reviews/feedback to students and assigned advisors. In addition, the program will undergo the yearly Outcome Assessment review and will be integrated in the 5-year Program Review process (e.g., as part of one of the lead departments). Consistent with the program objectives described in earlier sections of this document, the program goals (which include core competencies and technical skills) include:

- Identify and describe data analysis problems
Gather and organize homogeneous and heterogeneous data from public and private data sources, including web mining and database searches
Prepare datasets for analysis, through integration, harmonization, scaling, cleaning, converting and filtering data
Analyze data for patterns, trends
Determine classification and predictive models based on data
Develop summaries, visualization and other descriptive models
Apply the most appropriate analytics instruments to data sets
Use data analytics techniques to creatively solve problems

Different courses will introduce the most appropriate technologies (e.g., Weka), but all students will gain expertise in at least one operating system and two programming environments (Python and R).

8 Other
8.1 Accreditation
At present there is no recognized accrediting body for programs of this sort. Data analytics programs are quite new; they come in many different varieties, and there is no consensus as yet regarding what these programs should look like.

9 Appendices
9.1 Appendix A: Courses

A ST 505. Statistical Inference I [4 Credits]
A qualitative introduction to the concepts and methods of statistical inference. Sampling, frequency distributions (z, t, x2, F), estimation, and testing. One-way analysis of variance. Simple linear regression.

A ST 507. Advanced Regression [3 Credits]
Examination of multiple regression; residual analysis, collinearity, variable selection, weighted least squares, polynomial models, and nonlinear regression: linearizable and intrinsically nonlinear models.

A ST 515. Statistical Analysis with R [3 Credits]
Introduction to R data types, basic calculations and programming, data input and manipulation, one and two sample tests, ANOVA, regression, diagnostics, graphics, probability distributions, and basic simulations in the R software environment.

A ST 550. Predictive Analytics [3 Credits]
Data analytics techniques, data pre-processing, model tuning and cross-validation, linear regression, non-linear regression, regression trees, classification models.

A ST 555. Applied Multivariate Analysis [3 Credits]
Multivariate analysis of linear statistical models, including MANOVA and repeated measures. Analysis of correlation and covariance structures, including principal components, factor analysis, and canonical correlation. Classification and discrimination techniques.

ASTR 630. Methods of Statistical Analysis for Modern Astronomy [3 Credits]
Graduate class for students interested in applying statistical techniques to modern astrophysical data sets. Topics include a review of probability and probability distribution functions,
implications of techniques for statistical inference, regression and multivariate analysis, data smoothing, data mining, survival analysis and time domain analysis. Applications to real astronomical data sets will be emphasized with all topics.

**BCIS 575. Database Management Systems [3 Credits]**
Design, development, and use of database management systems in the business environment.

**BCIS 585. Enterprise Resource Planning [3 Credits]**
This course covers concepts in enterprise resource planning (ERP). Topics include how ERP integrates business processes across functional areas—such as the procurement process and the sales order process—and how businesses use ERP information systems in day-to-day operations as well as for performance monitoring. SAP R/3 software will be used in several hands-on examples of ERP software as a real-world example of an ERP system.

**BCIS 561. Business Analytics I [3 Credits]**
This course provides an understanding of how organizations can utilize technology to successfully collect, organize, manipulate, use, and present data. The course blends the use of current technology with the managerial practices involving business analytics. The emphasis of the course will be on data management practices and the production of descriptive analytics.

**BCIS 566. Business Analytics II [3 Credits]**
This course provides an understanding of how organizations can build and test predictive models, utilizing business-related data to estimate model parameters. The emphasis of the course will be on utilizing data management systems to produce useful predictive analytics.

**BIOL 566. Advanced Bioinformatics and NCBI Database [3 Credits]**
The course discusses how to use NCBI database and bioinformatic tools for research with genomics approaches. The topics include nucleotide and protein sequence analysis, similarity search with blast algorithms, gene/genome annotation, protein structure analysis, gene expression analysis, and metagenomic study.

**C S 453. Python Programming I [3 Credits]**
This course is an introduction to programming in the Python language, covering fundamental scripts, data types and variables, functions, and simple object creation and usage. The focus will be on preparing students to use Python in their own areas.

**C S 454. Python Programming II [3 Credits]**
This course covers advanced Python programming, including classes, objects, and inheritance, embedded programming in domain applications, database interaction, and advanced data and text processing. The focus will be on preparing students to use Python in their own areas.

**C S 458. R Programming I [3 Credits]**
This course is an introduction to data processing in the R language, covering fundamental script configuration, data types and data collections, R control structures, and basic creation of graphs and data visualizations. This course will not focus on the statistical capabilities of R, though some basic statistical computations will be used.

**C S 459. R Programming II [3 Credits]**
This course covers advanced R programming, including advanced data collection processing, advanced data visualizations, object oriented features of R, and file processing. It is recommended that students have one statistics course before taking this course.

**C S 502. Database Management Systems I [3 Credits]**
Database design and implementation; models of database management systems; privacy, security, protection, recovery; Students are expected to have solid knowledge of data structures and discrete mathematics.

**C S 506. Computer Graphics I [3 Credits]**
Languages, programming, devices, and data structures for representation and interactive display of complex objects.

**C S 508. Introduction to Data Mining [3 Credits]**
Techniques for exploring large data sets and discovering patterns in them. Data mining concepts, metrics to measure its effectiveness. Methods in classification, clustering, frequent pattern analysis. Selected topics from current advances in data mining.

**C S 512. Computer Systems Modeling and Simulation [3 Credits]**
Basic concepts of modeling computer systems: continuous and discrete time models, states and transition, probabilistic models. Structures of simulation programs, time driven and event driven simulation, simulation on captured and synthetic traces, generation of random variables, queuing models, Markov chains, random walks, Poisson, Markov, renewal branching and Brownian motion processes, model validation and data analysis.

**C S 519. Applied Machine Learning I [3 Credits]**
An introductory course on practical machine learning. An overview of concepts for both unsupervised and supervised learning. Topics include classification, regression, clustering, and dimension reduction. Classical methods and algorithms such as linear regression, neural networks, support vector machines, and ensemble approaches. Recent techniques such as deep learning. Focused on applying of machine learning techniques in application domains. More work might be required for graduate students.

**COMM 550. Seminar in Communication Technologies [3 Credits]**
Seminar on design, usage, and social impact of electronic mail, communication through computer networks, and new technologies of organizational communication such as group decision support systems (GDSS). Each student will study an actual application of a major communication technology in an organization.

**E E 565. Pattern Recognition and Machine Learning [3 Credits]**
Statistical pattern classification, supervised and unsupervised learning, feature selection and extraction, clustering, image classification and syntactical pattern recognition.

**E E 596. Digital Image Processing [3 Credits]**
Two-dimensional transform theory, color images, image enhancement, restoration, registration, segmentation, compression and understanding.

**ENGL 543. Multimedia Theory and Production [3 Credits]**
Issues, theories, and production practices underlying design of multimedia, including rhetorical choices, aesthetic approaches, usability concerns, and diverse academic and popular discourses contributing to continued development of digital texts.

**ICT 458. Database Design and Applications [3 Credits]**
MySQL and PHP. Data conversion using PHP, mysql and Python. Methods of transferring data from electronic boards and data feeds, into databases. Use of SQL in java programming. Remote
programming of computers for running database systems in a mixed OS environment. Generation of web pages directly from Database queries.

**ICT 460. Web Technologies and Multimedia [3 Credits]**
Addresses the latest multimedia technology advances and how they apply to the information and communication technology fields.

**IE 460. Evaluation of Engineering Data [3 Credits]**
Analysis of engineering systems possessing variability, employing regression, analysis of variance, distribution theory, and experimental design methods.

**IE 515. Stochastic Processes Modeling [3 Credits]**
Introduction to the use of stochastic processes in the modeling of physical and natural systems. Use of generating functions, conditional probability and expectation, Poisson processes, random walk models, Markov chains, branching processes, Markov processes, and queuing processes in an applied setting.

**IE 522. Queuing Systems [3 Credits]**
Elements and classification of queuing systems, single server models, multi-server models, cost analysis and applications.

**IE 537. Large Scale Systems Engineering [3 Credits]**
Systems engineering approaches to large-scale complex technological and societal problems. Concepts of interaction and structural graphs, matrices, delta, and Gantt charts. The hall matrix approach, structural concepts, reachability matrices, and cross impact-analysis, modeling and decision making.

**IE 545. Characterizing Time-Dependent Engineering Data [3 Credits]**
Theory and techniques employed in the characterization of stochastic processes commonly found in engineering applications. Distribution models include exponential, gamma, Weibull, and extreme value. Design and analysis of experiments involving complete and censored data and elevated stress. Analytical techniques include parametric, nonparametric, and graphical approaches with emphasis on modern computer tools. Exact and approximate maximum-likelihood techniques are stressed.

**IE 567. Discrete-Event Simulation Modeling [3 Credits]**
Basic modeling concepts, organizations of simulations, input data analysis, random variate generation, simulation design and analysis, model validation, output analysis, and management of simulations.

**MATH 518. Fourier Series and Boundary Value Problems [3 Credits]**
Fourier series and methods of solution of the boundary value problems of applied mathematics.

**STAT 470. Probability: Theory and Applications [3 Credits]**
Basic probability distributions including binomial, normal; random variables, expectation; laws of large numbers; central limit theorem.

**STAT 480. Statistics: Theory and Applications [3 Credits]**
Point and interval estimation; sufficiency; hypothesis testing; regression; analysis of variance; chi-square tests.

**STAT 535. Elementary Stochastic Processes [3 Credits]**
Markov chains, Poisson processes, Brownian motion, branching processes, and queuing processes, with applications to the physical, biological, and social sciences.
9.2 Representative Programs in Other Universities

The following is a list of popular Master’s degree programs according to several web site and journal rankings:

**American University:** The program is part of the Kogod School of Business. The program is a professional degree with emphasis on the business analytics aspects and with no computational competencies (beyond management of database systems). The degree requires 33 credits, which include 12 credits of elective courses in one of three areas of specialization: Policy, Finance, Marketing.

**Syracuse University:** the institution offers two degrees. The first one is a Master of Science in Business Analytics. The degree is a professional online degree, with an emphasis on applications in accounting, marketing, and business problems decision making. The second degree is a Master in Applied Data Science. This is also a professional degree program, with an emphasis on the application of tools and techniques to provide data-driven solutions. The program is composed of 36 credits, does not appear to offer any emphasis on the computational aspects and on the mathematical underpinnings.

**Southern Methodist University:** this institution offers a Master of Data Science degree program; the program has analogies to what we propose at NMSU. The program provides a rigorous introduction to the statistical and mathematical foundations, applied data mining, and a capstone course. Differently from what we propose, the program does not address computational aspects (e.g., programming) – a coding course is available as an elective.

**University of California-Berkeley:** The Master in Information and Data Science is composed of 27 credits and is the closest in structure to what we propose for NMSU. It includes foundational courses in both programming (Python) and statistics; differently from our approach, it emphasizes machine learning over data mining.

**George Washington University:** this institution offers a Master’s degree in Management of Health Informatics and Analytics; the emphasis of the program is on management of health records with application to public health, epidemiology and health marketing. The program does not provide emphasis on computing or machine learning.

**Maryville University:** The Master’s degree in Business Data Analytics requires 30 credits, organized in four areas: foundational courses (programming, databases), descriptive analytics (warehousing and analytics), predictive analytics (data mining and visualization), and prescriptive analytics (forecasting and capstone). The emphasis is only modestly on computing and there is a greater emphasis on data storage and management, and not on machine learning.

**Arizona State University:** the Master of Science in Business Analytics is focused on data mining, marketing, and business analytics; the program does not offer foundations of programming and statistics and no coverage of machine learning.
**Villanova University**: the Master of Science in Analytics consists of 36 credits; it includes a capstone course and places emphasis on both introductory programming (in R), data mining, business applications and use of data mining in enterprise systems. The program has limited computational coverage and no coverage of machine learning. The program does provide some foundational courses on multivariate analysis and statistical modeling.

**Southern New Hampshire University**: the Master in Data Analytics is composed of 36 credits, with a strong emphasis on data management, decision methods, risk assessment and project management. The degree does not provide statistical methods, machine learning or any level of programming.

**Purdue University**: the Master of Science in Business Analytics and Information Management requires 36 credits, organized in four areas: core courses (mostly focused on IT management, data management, data mining based on specific tools), communication and persuasion (1 course), functional area courses (mostly in accounting, economics, and management), electives (e.g., web analytics, R, spreadsheets). There is limited programming content, strong emphasis on business applications, no coverage of statistical modeling and machine learning.

**Utica College**: the Master of Science in Data Science is the closest degree program to what we propose. Composed of 30 credits, it includes a set of core courses (statistical methods, machine learning, data mining), electives organized by tracks (e.g., business, security, social sciences) and a capstone experience. Differently from what we propose, there is no programming content.

**Merrimack College**: the Master of Science in Data Science is a comprehensive degree program covering modeling, machine learning, data mining, visualization and social implications of data science. The degree includes a multi-source analysis capstone component; there is no programming component.

**Saint Joseph’s University**: the Business Intelligence and Analytics MS requires 30 credits, with a good coverage of data mining and programming (in both Python and R), along with applications in business analytics and supply-chain management. The program does not cover statistical modeling or machine learning.

**Penn State World Campus**: the Master of Professional Studies in Data Analytics is composed of 30 credits, composed of a core (data mining and applied statistics), prescribed courses (databases and data-driven decision making), a selection of electives (including a variety of applied statistics and data mining and visualization courses), and a capstone course. The program does not appear to cover programming or machine learning.
10 References


Agenda Item: Addendum to Chancellor Search Firm Contract

Requested Action of the Board of Regents:
Approval of an amendment to the executive search contract increasing the maximum direct expenditure to $50,000.

Executive Summary:
This amendment would extend the direct expenditure maximum of the Wheless Partners contract to $50,000.

References:
N/A

Prior Approvals:
Approval of the executive search contract on NOV-13-2017
Approval of addendum 1 to the executive search contract on FEB-12-2018

Agenda Item Approved By:

_____________________________________________  __________________
Debra Hicks  Date
Chair, Board of Regents