

New Mexico State University

Geo Notes



Welcome to the Department of Geography at New Mexico State University!

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Message from the Department Head

Greetings to our students, alumni, friends, and colleagues from the Department of Geography at NMSU. As we pass Spring and Summer 2013, we are very happy to share this newsletter with you and share some of the highlights to what has been a very successful 2013. As you will see from the items in this issue, we are working on exciting new projects, and we also participated in some great events. The

Spatial Applications Research Center (SpARC) has been successful in bringing new projects into the lab, and these include work with the Paso Del Norte Health Foundation, the New Mexico Department of Transportation, the Rocky Mountain Research Station, the El Paso Metropolitan Planning Organization, and the San Juan Coal Company. The Projects page of the SpARC website will keep you updated on how these and other efforts unfold in the future. I close by introducing a new editor, Dr. Campbell, who will be guiding the newsletter. Please send ideas for newsletter features or just stay in touch via geobird@nmsu.edu.



Best regards,

Christopher Brown, Department Head

Hello. Thank you for reading the newest edition of Geo Notes, the Geography Department newsletter. It has been an exciting time here in the Geography Department, and there has been a lot happening. Latest events include Homecoming, celebrated Tuesday, 22 October. Please look for photographs in the next newsletter. The SWAAG meeting held in Nacogdoches, TX was a big success the following week, and our fall speaker series is just beginning. Please look for flyers with details about these talks and also about upcoming opportunities for field trips. I'm always looking for fun photographs and articles about geography or geographers to contribute to the newsletter and to share with our alumni. Please send me noteworthy items and images. I look forward to staying in touch with current and future alumni.

Best wishes,

Carol Campbell, Associate Professor and Newsletter Editor



Mission Statement

The mission of the NMSU Department of Geography is to enable our graduate and undergraduate students to be responsible citizens, lifelong learners, and professional geographers with critical thinking and problem-solving skills that make them competitive in both graduate programs and the job market; advance, basic, and applied geographic research on issues of relevance to the State of New Mexico and the American Southwest; and to reach out and serve the University, the State, local communities, and the discipline of geography.

Vision Statement

The NMSU Department of Geography seeks to build a strong and effective learning community of graduate and undergraduate students, faculty, and others to create, share, and apply knowledge and skills in the areas of geospatial science and technology, geographical field techniques, and human-environment system dynamics.



VOLUME 2, ISSUE 1

Alumni Updates: Master of Applied Geography

Rusty Stovall, Operations Supervisor, LC Office of the Bureau of Land Management

What year did you graduate, graduate or under-graduate, and from what program or focused study?

Bachelor of Science, City and Regional Planning, 1993

Masters of Applied Geography, Biogeography, 1996

As a Master's student, what was your thesis and with whom did you work?

Dr. Jack Wright was my advisor, and my master's thesis examined the spatial distribution of *escobaria villardii*, a.k.a. Villard's pincushion cactus.

What did you do when you left NMSU?

During the latter part of my time in the Department, I was fortunate enough to obtain an internship/co-op position with the local office of the Bureau of Land Management (BLM) in Las Cruces, working as a GIS intern. After I graduated from NMSU, I was picked up as a full time employee for the BLM.

What are you doing these days?

For eleven years I was District GIS lead, and for the last nine years I have been Chief of Operations at the Las Cruces District BLM office. Within this role I oversee departments pertaining to GIS, Engineering, Force Account, Safety, Hazardous Materials, and Abandoned Mine Lands (AML). I provide coordination of operational and technical support for varied



district-wide projects dealing with range, wildlife, fire, recreation, archeology, and lands & minerals. Currently our biggest project is the closures of AMLs. This entails comprehensive inventories of mine locations and environmental assessments of each mining district including bat and cultural clearances. Findings through the environmental assessments determine procedures for closing each mine.

What's next? What are your long-term plans?

My current plans are to continue working at the BLM Las Cruces District Office until retirement. After retirement, I plan on traveling with family, and may eventually look into contractual work.

How has your geography degree helped you?

WOW, where to start!? My biogeography training was a really good fit with the BLM because of the multidisciplinary approach that the Department advances in their teaching and research. Having the two degrees that I have earned has allowed me to "move up the ladder" at the BLM and take advantage of the advancement opportunities that have come my way. My degrees and training have also prepared me for the environmental planning aspect of my job, specifically how to deal with environmental policies that BLM advances. My early work in the GARL lab (now SpARC) got me started in the "GIS game," and I was able to build on this early work in my co-op with the BLM that lead to a



Alumni Updates MAG Continued.....

permanent position with them. I have been fortunate enough to merge my family's interests in ranching and my formal training from NMSU in GIS and Geography into the public lands management work that I do with the BLM.

Any closing thoughts or fond memories?

The NMSU Department of Geography has been and continues to be a very strong department. I really enjoy living and working in a region where I can sustain a strong working relationship with the Department. I am also fortunate to be in a position where I can employ students from the Department to give them "real world and real life experience" that cannot help but assist them in developing their own career niche. Of special note are two of your best students that have done very well with BLM: Marcos Molinar (class of 2009, MAG) – After graduating from NMSU in 2009, Marcos worked his way up in BLM, and he currently serves as the state GIS lead for BLM in Santa Fe, and Ray Hewitt (class of 2002, MAG) – Ray worked for BLM as he was completing his degree, and he also worked his way through the ranks to his current position as GIS lead for the Las Cruces BLM District Office.

Alumni Updates: Bachelor of Science

Courtney Thompson, Class of 2010, Doctoral Student, University of Idaho

What year did you graduate, grad or u/g, and from what program or sub-area?

Bachelor of Science, Geographic Information Science & Technology, NMSU, 2010

Minor of Geology, NMSU, 2010

Master of Geography, Focus of natural hazards, human/environment interactions & GIS, Univ. of Idaho, 2012

If a Master's student, what was your thesis and with whom did you work?

I worked with Dr. Tim G. Frazier at the University of Idaho.

My master's thesis is titled, "DEVELOPMENT OF A PROBABILISTIC STORM SURGE AND INLAND PRECIPITATION MODEL AND A THEORETICAL FRAMEWORK FOR VULNERABILITY AND RESILI-ENCE QUANTIFICATION FOR COASTAL COMMUNITIES". What did you study at NMSU?

B.S., Geographic Information Science & Technology

What did you do when you left NMSU?

- I went to graduate school at the University of Idaho. I completed my Master's degree in Geography, specializing in natural hazards and human-environment interactions.

What are you doing these days?

I am working towards a PhD at the University of Idaho. My dissertation focuses on societal vulnerability and hazard modeling for hurricane events along the Florida coast.

What's next?

After I finish my PhD, I will either stay in academia, or go work somewhere in an industry. I am unsure of what I really want to do, but I have time to figure that out.



Alumni Updates Bachelor of Science cont...



How has your geography degree helped you?

My geography degree has helped me in multiple ways over the past few years. The classes offered during my undergraduate time, gave me opportunity for TA-ships of the more advanced GIS and cartography classes. I am often asked to work on interesting projects that require more technical skills. Overall, it has provided me with a variety of skills that will help me qualify for a diverse range of job possibilities in the future.

Research and Teaching News

Development of a Subgrade Stabilization Protocol for Design and Construction Control

Dr. Dugas is currently a Co-Principal Investigator with Douglas Cortez (PhD), Paola Bandini (PhD), and Brad Weldon (PhD) of the NMSU Civil Engineering department on a two-year grant funded by the New Mexico Department of Transportation titled, "Development of a Subgrade Stabilization Protocol for Design and Construction Control". His role is to map various soil characteristics as part of a field handbook that will assist highway engineers in the assessment of subgrade soil suitability for road construction and traffic loads. The Geography Department's Spatial Applications Research Center (SpARC) is being utilized. Lab Director, Randy Carr, and graduate student, David Silcock, have headed the lab's contribution to the mapping; cartographically converting Dr. Dugas's ideas into GIS products.

Bob Czerniak's Retirement, July 2012

Dr. Czerniak continues to be involved in the department and the field of geography. The first recipients of the Robert and Beth Czerniak Endowed Scholarships were awarded in May of 2013. Over the past 12 months he has contributed to the development of two proposals with the Texas Transportation Institute in El Paso. He has undertaken two article reviews for <u>Transportation Engineering</u> and one article review for the <u>Moravian Geographical Report</u>. During the summer, Robert and his wife Beth took a trip to Detroit and spent time on the Alaska Marine Highway System visiting Ketchikan, Wrangell, Skagway, and Juneau, Alaska. They also spent time in Seattle and rode the Amtrak Cascades train to Portland where he visited his son. Jonathan is a land-use planner within Washington County, Oregon.

Master's student attends conference to target high-risk flood areas



Roberta Lujan is a New Mexico State University researcher that has returned from an international conference with the latest technology in flood-risk mapping.

Roberta, a graduate assistant in the Geography Department, attended the ESRI International Users Conference in San Diego, CA, to learn more in regards to modeling potential flood areas.

GIS technician in the Spatial Applications and Research Center, Lujan was among 12,000 attendees from 130 countries around the world at the conference in July.

"With this software, we can model the areas more accurately and produce maps that can be used to alert the public, government officials, and EMS where the high-risk areas would be" (Lujan).

http://newscenter.nmsu.edu/9612/nmsu-geographer-attends-conference-to-



Recycling map presented to Sustainability Council

Dr. Campbell is promoting recycling efforts at NMSU. She has been working with the recycling staff to improve access and student awareness of recycling. During the Spring semester, Campbell created a special topics course to map recycling resources at NMSU.

The project involved 6 undergraduates and two graduate students in Geography. Students found that access to bins was the limiting factor for students recycling. They conducted a population density analysis on campus, the results indicated that relocating bins would be the most efficient solution. The maps and conclusions were presented to the Sustainability Council in July, 2013. Look for an upcoming article in the Sun News and contact Dr. Campbell for more information.



i-Tree articles from Sun-news 2-24-13

Editor's Note: "Eye on Research" is a weekly feature by New Mexico State University. This week's feature was written by Audry Olmsted of Communication Dept.



How compatible are the trees on the New Mexico State University Las Cruces campus to the desert Southwest? Researchers in the College of Arts & Sciences' Department of Geography are using a state-of-the-art program to answer just that question.

The **Spatial Applications and Research Center (SpARC)** has been commissioned by the Office of Facilities and Services to map every tree on campus in an effort to collect their various characteristics and whether they are sustainable for the region.

To accomplish this task, the department has turned to the i-Tree

computer program. "This program allows us to identify each tree species on campus," said Buddy Clark, a GPS field and GIS technician for the department's SpARC lab. "By looking at the tree species we have on campus, we can look at what takes in the most water and which trees do well here. We can plant those trees that thrive in and can survive in this desert environment, and eventually phase out the trees that do not.".

Initially started in May 2011, Clark is now working on a more in-depth version of the map. Out of 13 zones, he has finished mapping one zone and is working on another. Through his process of mapping, Clark identifies each tree by their species and also looks at the diameter of the trunk, the condition of the leaves and the wood, and also observes each tree's location in relation to buildings, medians and other spaces. The computer program collects and stores all the data gathered. More than 65 species of trees and more than 6,000 trees are on campus - a number that changes almost daily as trees are planted or removed — and Clark has tracked each one. "The i-Tree program gives us a good management tool," he said. "Everything that a person needs to know about a specific tree on campus is available through the data collected."

This program also benefits students on campus. Carol Campbell, an associate professor of geography, uses the campus as her living laboratory and said her interest in the program is to help facilitate ecological balance on campus. She is working with Clark to apply the program to NMSU and has also used it to produce lab activities for her students in biogeography. The students utilize the program in the field to learn about the natural environment, as well as how to bring that information into GIS education to see how that data is analyzed and combined for such characteristics as carbon sequestration and oxygen production. "I think this is a fantastic program," she said. "This is a wonderful start for Las Cruces and NMSU. Contributors such as Davey Tree and the Arbor Day Society have all supported this program because trees are one of those resources that are really critical for clean air, oxygen, habitat and provisions for all different kinds of organisms. I wouldn't like a place without trees." Clark said the Office of Facilities and Services can use the data gathered when deciding on any campus upgrades or remodeling, and it can also be used for general campus aesthetics.



Pubs and Papers

Christopher Brown

- Brown, C. 2013. "Mapping the Landscape of Human Development in Dona Ana County," a paper presented at the 2013 Annual Meetings of the Association for Borderland Studies. 12 April 2013. Denver, CO.
- Brown, C. 2012. "Enhancing the relevance of Geography in exploring human-environment relationships in the Rocky Mountain West," a paper presented at the 2012 SWAAG Annual Conference. 28 October 2012.
- Brown, C., R. Martin, and R. Carr. 2012. "Mapping the landscape of quality of life in Dona Ana County," a paper presented at the 2012 SWAAG Annual Conference. 28 October 2012.
- Granados Olivas, A., C. Brown, V. Hugo Esquivel Ceballos, Z. Edwards, and A. Pinon Villareal. 2013. "Cambios en el uso del suelo urbano: evaluacion de riesgos hidrometeorologicos en la region Paso del Norte aplicando sistemas de informacion geografica." Paper published in Dinamicas Locales del Cambio Abiental Global (ed. Erick Sanchez Flores and Rolando E. Diaz Caravantes), a monograph published by la Universidad Autonoma de Ciudad Juarez, Cuidad Juarez, Chihuahua, Mexico.

Michaela Buenemann

- Buenemann, M. 2013. *Teaching geographic information science and technology in higher education*, D. J.
 Unwin, K. E. Foote, N. J. Tate, and D. DiBiase. Book review. Photogrammetric Engineering & Remote Sensing 79 (6): 509-510.
- Diallo, D., C. T. Diagne, K.A. Hanley, A. A. Sall, M. Buenemann, Y. Ba, I. Dia, S.C. Weaver, and M. Diallo. 2012. Larval ecology of mosquitoes in sylvatic arbovirus foci in southeastern Senegal. *Parasites & Vectors* 5: 286. DOI 10.1186/1756-3305-5-286
- Diallo, D., A.A. Sall, M. Buenemann, R. Chen, O. Faye, C. T. Diagne, O. Faye, Y. Ba, I. Diagne, D. Watts, S.C. Weaver, K.A. Hanley, and M. Diallo. 2012. Landscape ecology of sylvatic chikungunya virus and mosquito vectors in south eastern Senegal. *Public Library of Science Neglected Tropical Diseases* 6 (6): 1-14. DOI 10.1371 journal.pntd.0001649.
- Buenemann, M. 2012. Why 'where' matters: understanding and profiting from GPS, GIS, and Remote Sensing, R. Ryerson and S. Aronoff. Book review. Photogrammetric Engineering & Remote Sensing 78 (7): 666-667.

Carol Campbell

- Campbell, C. L. 2013. Avian community composition along an elevation gradient through Yosemite National Park c. 1914-2004. Poster presentation. International Biogeography Society, 5th Bi-annual Conference at Florida International University.
- Campbell, C. L., March 13, 2013, Biogeography of Yosemite. Presentation for Native Plant Society, LC, NM.
- Campbell, C. L., 2013. Avian Community Composition Across the Sierra Nevada, California. Paper presentation. AAG, Los Angeles, CA.
- DeVries, M., Campbell, C.L., Desmond, M.J. DeMers, M. N. Agricultural Habitat Fragmentation Effects on Burrowing Owl (*Athene cunicularia*) Productivity in the Great Plains. (in preparation).

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Pubs and Papers continued...

Michael DeMers

- DeMers, Michael N., 2013. Land Classification Research: Retrospective and Prospects, International Journal of Applied Geospatial Research, (in press).
- DeMers, M.N., et al. 2013. Toward an Immersive 3D Virtual BoK Exploratorium: A Proof of Concept, Transactions in GIS (in press).
- Ahearn, S., I. Ilknur, R. Datta, M. DeMers, B. Plewe, and A. Skupin, 2013. Re-Engineering the GIS&T Body of Knowledge, International *Journal of Geographical Information Science*, (in press).
- DeMers, M.N., Toward a 3-D Immersive Virtual Exploratorium for the GIS&T Body of Knowledge, Association of American Geographers, Las Cruces, NM Apr. 10, 2013.
- DeMers, M.N., A Reality-Based Geodesign Exercise: Informing the Valles Caldera National Preserve Management Act, Geodesign Summit, Redlands, CA, Jan. 24, 2013.
- Distinguished Graduate: University of North Dakota, Department of Geography

Dan Dugas

- Dugas, D.P. 2012. "The remarkable, hypotheses, and critical thinking. (Abstract) Southwest Division of the Association of American Geographers Annual Meeting. Las Cruces, NM
- Dugas, D. P. 2012. "Influences of Scale and Spatial Attractors on Pogonomyrmex rugosus Nest Distributions in the Chihuahuan Desert, New Mexico". Southwestern Geographer, Vol. 15.

Jack Wright

- Submitted. Wright, John B. "The Road to Lo Manthang: Tourism and Change in Upper Mustang, Nepal" *Geographical Review*
- Submitted. Williams, Jon and John B. Wright. "The Geography of Buddhism in the Four Corners States." *Journal of Cultural Geography*
- In Press. Wright John B. "The Four Symbolic Boundaries of the American West." Geographical Review
- In Press. Wright, John B. "The Pilgrimage to Santiago de Compostela, Spain." Focus



Geography Department Gives Back

Of late, Geography Department faculty, students and staff have been very busy in a range of service and outreach activities that allow us to "give back" to the community in which we live. Below, we share some highlights of this work and also provide contact information of people involved, should readers wish to learn more about these projects.

- Quality of Life issues with the J. Paul Taylor Symposium– In 2011, County Commissioner Billy Garrett invited NMSU faculty to start a discussion on improving the quality of life (QoL) of people in Dona Ana County (DAC). This discussion evolved into the College of Arts and Sciences selecting "[QoL] in [DAC]" as the topic for the 2012 and 2013 J. Paul Taylor Symposium. For 18 months, SpARC conducted spatial analysis, producing a series of maps for the symposium. This has recently evolved into the Ocotillo Institute for Social Justice, an effort to continue this work. Randy Carr, Becky Martin, Madelyn Schoderbek, and Chris Brown worked together; learn more about this by contacting Prof. Brown at brownchr@nmsu.edu.
- Local Search and Rescue Organization For years, Dr. Buenemann has been an active member of two NM Search and Rescue teams: Doña Ana County Search and Rescue and the Organ Mountain Technical Rescue Squad. Dr. Buenemann has applied her expertise of GPS and GIS and her extensive experience with orienteering, reading, and landscape interpretation of maps to aid groups, including actively working on missions. The motto tells it all in regards to Dr. Buenemann's work; "serving the community so that others may live." Learn more about it by contacting Prof. Buenemann at <u>elabuen@nmsu.edu</u>.
- Audubon Society Chapter For years, Carol Campbell has been a board member of the Mesilla Valley Audubon Society (local chapter of National Audubon Society) providing scientific expertise to their work and acting as the Scholarship committee chair. She also leads a group of students and volunteers on the annual Christmas Bird Count at NMSU. People wishing to learn more about this can contact Prof. Campbell at <u>geobird@nmsu.edu</u>.
- **Spreading Geography with the NM Geographic Alliance (NMGA)** Michael DeMers has won a series of research grants from the National Geographic Society that support efforts to reinvigorate the NMGA, an effort to promote geographic education. The Alliance seeks "to provide resources and professional development for elementary and secondary school teachers, ensuring the public understands the rationale behind comprehensive geography education throughout the State of New Mexico." Dr. DeMers has worked with Randy Carr, and Julia Parra, to advance this work. The Alliance now has an office on campus and an updated Website. People wishing to learn more about this, contact Prof. DeMers at <u>demers01@gmail.com</u>.
- It starts with our K-12 community –. Dan Dugas is widely recognized as a wonderful teacher, and for years, he has shared his teaching expertise with kids in local K-12 schools through many visits he's made to classrooms. At a recent conference, Dr. Dugas shared, "the sublime and remarkable of physical geography" as teaching tools, and he has long deployed this perspective to open the eyes of children to the wonders of the Southwest, the interest-ing world of science, and the value of the geographic perspective. Given Dr. Dugas's enthusiasm in the classroom, it is no surprise he is invited back to open the minds of our children. People wishing to learn more about this can contact Professor Dugas at <u>ddugas@nmsu.edu</u>.
- Helping to conserve the Western Range within New Mexico The New Mexico Land Conservancy is a non-profit group in New Mexico that seeks to protect large scale open space. Their mission is "preserving New Mexico's land heritage by helping people conserve the places they love." Jack Wright served as Chair of the Board of Directors and as a member with the conservancy. He serves as Working Land Advisor to help advance work. The conservancy completed a capital campaign, secured a historic property for headquarters, and lead efforts to conserve over 100,00 acres of ranches and farmland. People wishing to learn more about this can contact Prof. Wright at jow-right@nmsu.edu.



Speakers Series Presents:

Nick Duttle

NMSU Geography Alumni

Class of 2005

Friday, 22 February 2013 3:00-4:00pm Breland Hall Rm. 185

"Stories and snaps from Nick's adventures rock climbing some

of this hemisphere's most challenging climbs"

Dr. Shaymonkul Hushmurodov

Visiting Scientist from Uzbekistan

Friday, 3 May 2013 -3:30-4:30pm Breland Hall – 185

"Cultural and historical views of Uzbekistan and research into rates of soil redistribution on the Uzbek landscape"





Student Organizations

GTU and Geography Faculty take on Raft the Rio

Raft the Rio is an event that you have to experience to believe. The annual event held by the Southwest Environmental Center, attracted a crowd from all over Dona Ana County. It is not everyday that you can raft the

Rio Grande in southern New Mexico. The river's flow from Elephant Butte is controlled for agriculture. Only one week before the event, the Rio Grande was completely dry. The Geography Department and the geographic honor's society, Gamma Theta Upsilon, were well represented.

Photograph Below: Dr. Brown and son Jared breathe easy having made land following a fun filled float.. Dr. Campbell's husband Jim helps folks from the waters where she rewards rafters with watermelon provided to SWEC by Albertson's. Geography student volunteers Beth Gonzalez, Steve Walker and David Silcock directed traffic and helped load rafts. Thanks to Bob Sabie who coordinated this for GTU.





All Geography Clubs

Graduate Geography Club

A social club for graduate students within the Geography department. The club often teams up with members of the undergraduate geography club for intramural sports on campus. For more information contact Robert Sabie at rpsabie@nmsu.edu.

Undergraduate Geography Club

A social club for undergraduate students within the Geography department. Main activities within this club include socials, intramural sports, study groups, and hiking trips. For more information contact Andrew Martinez at anpama99@nmsu.edu.

American Society of Photogrammetry and Remote Sensing

The NMSU student chapter of ASPRS is intended for anyone with an interest in geographic information science & technology (e.g., remote sensing, photogrammetry, geographic information systems). Discussions are held monthly regarding these subjects. For more information contact Rebecca Richman Richman at rrichman@nmsu.edu.

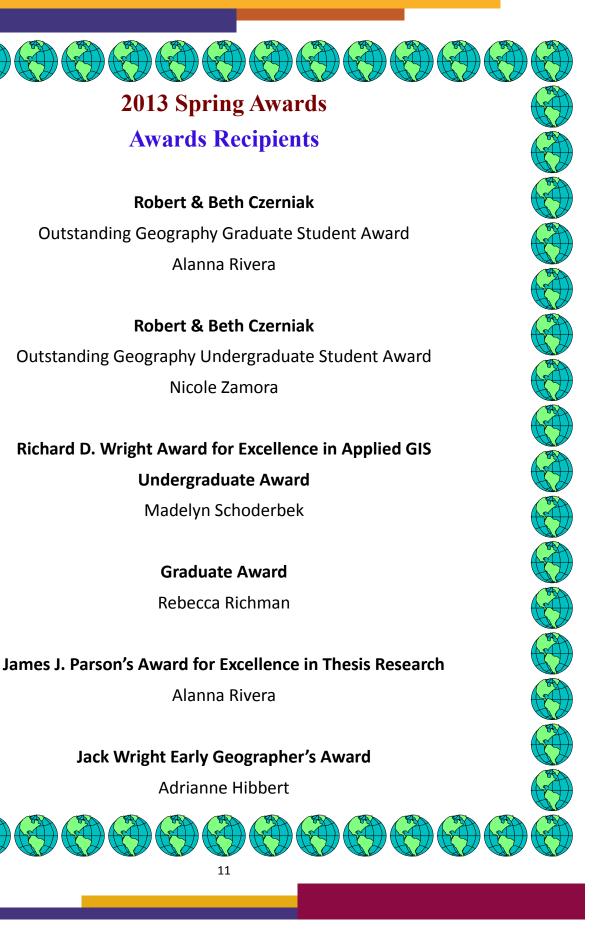
Gamma Theta Upsilon

An international honor society in geography. Members must have met academic requirements and shared background interest in Geography. For more information contact Robert Sabie at rpsabie@nmsu.edu.

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WE'RE ON THE WEB!

http://geography.nmsu.edu/

NMSU DEPARTMENT OF GEOGRAPHY LAUNCHES ITS OWN FACEBOOK PAGE!

THE NMSU DEPARTMENT OF



GEOGRAPHY IS PROUD TO ANNOUNCE THE RECENT LAUNCH OF A DEPARTMENTAL FACEBOOK PAGE. WE HEARTILY INVITE ALL STUDENTS, FACULTY,

STAFF, AND ALUMNI TO VISIT THE PAGE, CHECK OUT WHAT IS HAPPENING WITH THE DEPARTMENT, AND SHARE SOME NEWS OF WHAT IS GOING ON IN YOUR WORLD. WE HOPE TO SEE YOU THERE!

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