

# Geospatial and Population Studies

**Adélar N. Alcántara**

Director

2017 Annual Review Of Category 3 Research Centers/Institutes

# Mission

Geospatial and Population Studies supplies trustworthy information that serves communities and government agencies; offers cutting-edge technology and research methods; and provides a fertile training ground at UNM for a new generation of applied researchers and decision makers.

# 2017 Goals And Status

## Goal 1: Increase funding sustainability.

- Status: In fiscal year 2017, GPS received \$1.35 million in funding from seven sources.

## Goal 2: Secure funding for the 2020 Census Local Update of Census Addresses (LUCA) review.

- Status: \$380,000 has been secured for fiscal year 2019.

## Goal 3: Update Census geodatabase.

- Status: Two steps completed. Two others in progress.

## Goal 4: Standardize all GPS databases.

- Status: Infrastructure set up. Servers being customized. Standardizing of code under way.

## Goal 5: Increase staff professional development.

- Status: Seven staff members underwent a variety of professional development, including conferences, online courses and academic classes.

## Goal 6: Change name

- Request in the Fall a change to “Institute for Geospatial and Population Studies”.

## Goal 7: Strengthen branding.

- Status: Improved website. Hired technical writer.

# Membership of Advisory Committee

(as defined in Standard A91 #1)

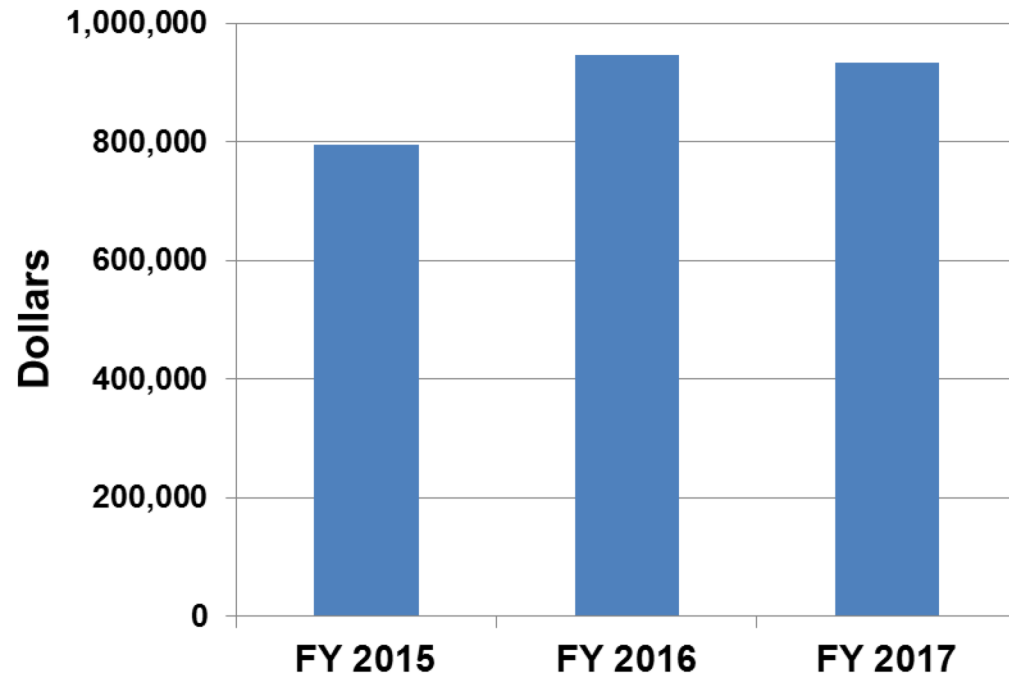
Status: Advisory Committee is still being formed. It is anticipated that the committee will be in place by the end of Fall of 2018.

# 2017 Highlights

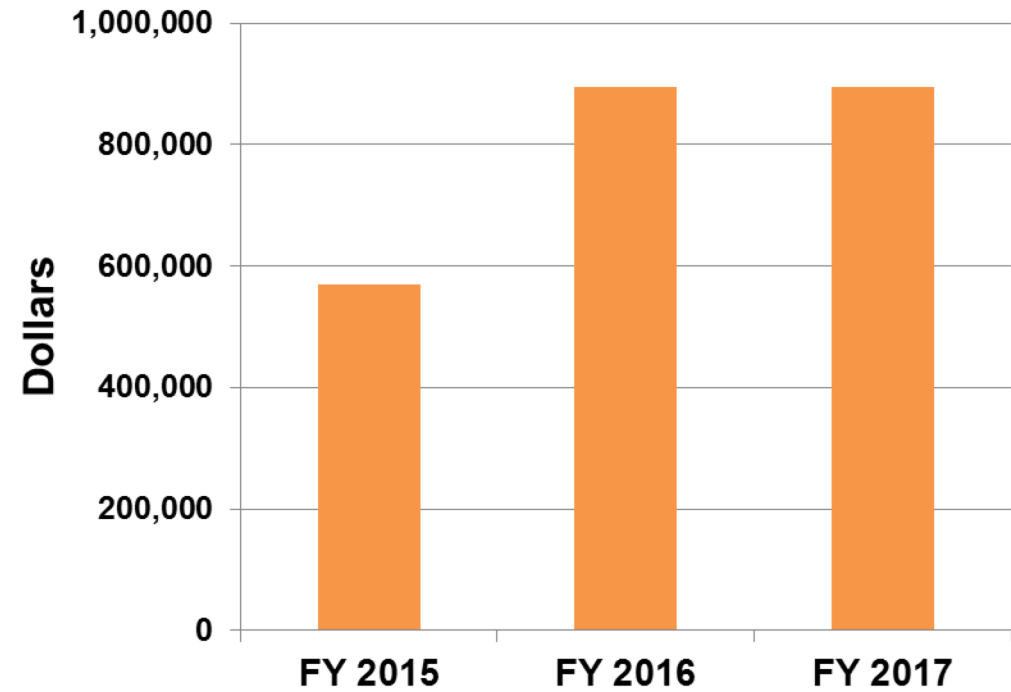
- GPS was appointed by Governor Martinez as the state liaison to the Local Update of Census Addresses program, and more than \$300,000 has been raised for the project.
- GPS hired two research scientists, one programmer/analyst and one technical writer.
- GPS was frequently cited in national and state press regarding demographic trends, the 2020 census and traffic safety.
- GPS presented talks at several national and state conferences, including:
  - Population and Public Policy Conference, January 2017.
  - Federal-State Cooperative for Population Projections, April 2017.
  - Kenya Scholars and Studies Association Conference, September 2017.
  - Five talks on traffic crashes around the state.
  - Many talks and discussions regarding the 2020 Census and its importance to New Mexico.
- GPS developed a strategic plan for 2018-2020.

# Proposals & Awards

## Proposals

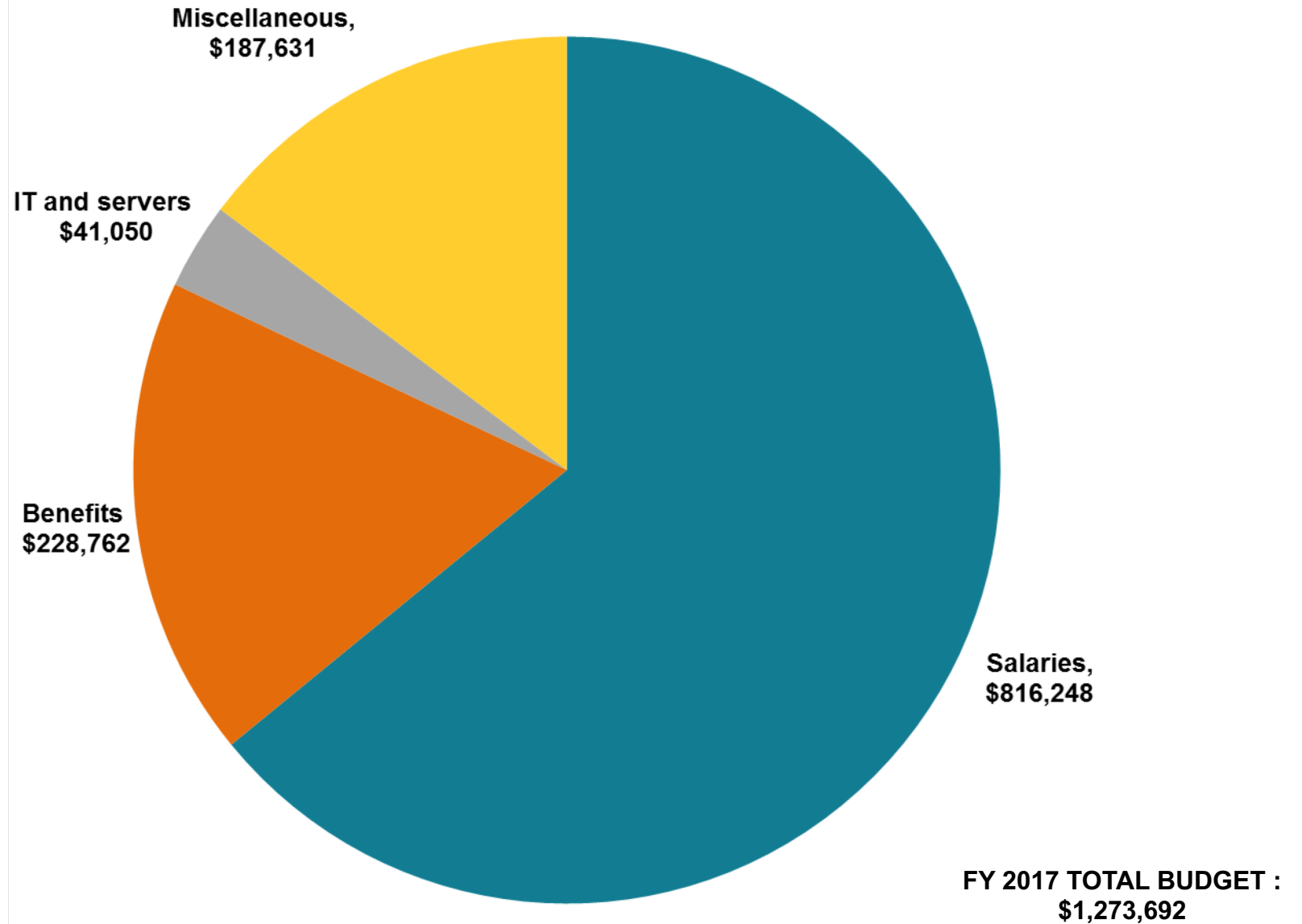


## Awards



## FY 2017 Budget

- 64% of GPS' budget was for salaries
- 18% for benefits
- 3% for IT and servers
- Miscellaneous includes printing, memberships dues, books, travel communications, etc.



# Research Center Impacts

- Resource for the campus
  - Provides data for use in research by other institutes on campus.
  - Provides demography lectures as part of planning class.
  - Consults with students and faculty members on population topics.
  - Provides training for students on GIS, programming and more.
- Resource for state and region
  - Provides traffic crash data, analysis and publications.
  - Provides state and county population projections by age and sex.
  - Provides small-area population estimates by age, sex, race/ethnicity.
  - Provides expert opinion on socioeconomic and demographic issues.
  - Serves as liaison to the Census Bureau and related organizations.
  - Serves as state-level LUCA reviewer for census.



# Return On Investment

- Number of undergraduate students trained: 16
- Number of graduate assistants: 7
- Total number of awards and total dollars: 4 awards; \$1,252,160
- Publications
  - Refereed
    - Vasan S and Alcantara A (2016). GIS-based Methods for Estimating Missing Poverty Rates & Projecting Future Rates in Census Tracts. *Review of Economics and Finance*, Vol. 6, Issue 3.
    - Chen C, Zhang, G. Yang J, Milton J, Alcantara, A. (2016). An Explanatory Analysis of Driver Injury Severity in Rear-End Crashes Using a Decision Table/Naïve Bayes (DTNB) Hybrid Classifier. In: *Accident Analysis and Prevention* 90:pp 95-107.
  - Other
    - NM Traffic Crash Annual Report, 2015.
    - NM DWI Report, 2015.
    - Poster: DWI and Enforcement in NM Counties, 2011-2015.
    - Community crash reports for all 33 counties and over 50 municipalities in the state.

- Disparate backgrounds of staff members.
- Long-term records of crash data and population data.
- Recognized expert on New Mexico’s demographics.
- Experienced working with state agencies.
- Only entity in state that produces state and county population projections by age and sex.
- Sustainable funding.

**STRENGTHS**

- Lack of engineering component.
- No marketing or promotion.
- Lack of fiscal resources.
- Niche not well defined.

**WEAKNESSES**

- Collaborate with other departments to offer courses in traffic safety and demographics.
- Develop interactive mapping and data display.
- Pursue funds for global health research.
- Pursue more applied research using Traffic and Criminal Software (TraCS).
- Develop applications using artificial intelligence.

**OPPORTUNITIES**

- Lower funding from NMDOT contracts.
- Turnover in key positions.
- Slow getting contracts approved.
- Compensation doesn’t keep pace with inflation.
- UNM IT costs increasing but service decreasing.

**THREATS**



# Looking Ahead To 2018

- Ongoing Census 2020 preparation.
- Renewal of data analysis contract with NM Department of Transportation.
- New partnerships/relationships
  - Kenya Ministry of Health Neglected Tropical Diseases Division.
  - Partnership for clearinghouse for neighborhood-level data.
  - Partnership to study effect of government assistance on poverty.
- Other projects
  - Artificial Intelligence Neural Network Application to replace traditional optical character readers.
  - Automation of part of traffic crash annual report.
  - Interactive website for traffic safety data.
- Developing and implementing an improved marketing strategy.

# Summary

GPS is positioned well for the future after carving out a research niche over the years. With its newest staff members, GPS can increase automation to focus on higher-level initiatives, improve marketing to lead to more contracts, and strengthen its research and analysis capabilities to improve public decision making. With the 2020 Census now two years away, GPS is poised for the challenges of ensuring a complete count in New Mexico and plans to leverage the increased exposure into new opportunities.