

# ***FALCON FAMILY NEWS***

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## **USAFA TOPS IN COLLEGE RANKINGS!**

### **Academy Tabbed Best in the West**

By John Van Winkle, Academy Public Affairs

The Air Force Academy was named the best baccalaureate college in the west, and received top rankings in several engineering programs, according to the U.S. News & World Report's America's Best Colleges 2008 rankings, released Aug. 17.

U.S. News & World Report evaluated the 320 universities in the nation that offer only undergraduate degrees, and ranked them in four geographic regions: west, north, mid-west and south.

In the west region, the Academy was the hands-down #1 best baccalaureate college. This region includes Texas, Oklahoma, and every state north, south and west of Colorado, including Alaska and Hawaii.

The ranking was based on a range of university-wide statistics, including student-faculty ratio, percentage of full-time faculty, acceptance rate, average class size, and freshman retention rates. The Academy's student-faculty ratio is 8-to-1; 100 percent of the faculty is full-time; acceptance rate is 19 percent; and 81 percent of classes here have less than 20 cadets in the classroom.

The rankings are produced after examining a weighted combination of factors. These start with peer assessment by university deans and senior faculty (25 percent), graduation and retention rates (25 percent), faculty resources (20 percent), student selectivity (15 percent), financial resources (10 percent) and alumni giving rate.

“The positive assessment from college and university presidents, provosts and admissions deans is really an extension of how the public views our United States military in general and the Air Force Academy more specifically,” said Brig. Gen. Dana Born, Dean of Faculty.

“In the 2007 Gallup Poll on “Confidence in Institutions,” Americans ranked the military #1 by a relatively wide margin. You can see the same theme in the U.S. News & World Report ranking as the U.S. Military Academy, the U.S. Naval Academy and the U.S. Air Force Academy represented three of the top seven undergraduate institutions. This positive U.S. News & World Report peer assessment shows that our colleagues acknowledge our desire to reflect the excellence of our active duty military,” added the General, herself a 1983 Academy graduate. “I also must acknowledge the significant contributions at the Air Force Academy of our visiting professors from many of the same civilian institutions that appear on the rankings.”

Several of the Academy’s undergraduate engineering disciplines also received top national rankings. Overall, the Academy’s undergraduate engineering programs are tied with Pennsylvania’s Bucknell University for the #7 program in the nation this year. Several undergraduate engineering specialties were also ranked among the nation’s best.

In civil engineering, the Academy tied Virginia Military Institute, Pennsylvania’s Lafayette College and Illinois’ Bradley University for the #7 slot.

In electrical engineering, the Academy tied New Jersey’s Rowan University for the eighth best in the nation.

The Academy’s management department made the charts, tying for #83 in the best undergraduate business program rankings.

The rankings are separated by which universities offer graduate education programs, and those which have only undergraduate programs, like the Air Force Academy.

But the most consistent ranking is that of aeronautical and astronautical engineering. While the magazine lumps these two separate and distinct disciplines into a single category, it has ranked the Academy’s aeronautical and astronautical engineering programs as #2 in the nation every year since 2001. The larger programs of Embry-Riddle Aeronautical University have held the top spot for each of those years.

## **AERONAUTICS**

The Department of Aeronautics has worked to earn those rankings via a number of projects this past year.

“We worked on seven different aircraft design projects for five different government and commercial customers who provided various levels of funding. Our largest program was a two-semester effort for the Air Force Research Laboratory to design a long-range strike aircraft,” said Dr. Aaron Byerley, head of the Department of Aeronautics. The LRS requirements are many, but basically boil down to a combination of range, speed and lethality, and will be one option to eventually replace the current fleet of B-1, B-2, F-117 and F-15E aircraft.

“The LRS is one of the Air Force’s top six acquisition priorities with an anticipated in-service date of around 2025. Customers and engineers from industry were personally briefed by on all design study results,” said Dr. Byerley, Class of 1978.

Faculty and aero major cadets have also earned praised when they put their words to print. They authored or co-authored 14 different conference papers at the 2007 Aerospace Sciences Meeting in Reno, Nevada.

This is the premier technical conference sponsored by the American Institute of Aeronautics and Astronautics, and represents the highest level of technical accomplishment in the world,” said Dr. Byerley.

The number of Academy papers exceeds those from nearly every institution in the country, including universities with doctoral programs, government laboratories and industry.

“What is even more noteworthy is that, among these papers, six of them had cadet or recent graduate co-authors, and nearly all of those were presented by the cadets themselves. In each case, those junior engineers fielded challenging questions from the premier aeronautical researchers in the country.”

The department’s continued record of success in cadet-centered research and design serves the interest of the Air Force, and is a win-win-win situation, he added.

“The Air Force wins because we help solve Air Force problems. The cadets win because their education is enriched by working on actual, real-world projects under the closer mentorship of senior researchers. The faculty wins because we get to sharpen and develop our professional expertise while working on meaningful projects alongside outstanding young people,” said Dr. Byerley. “Additionally, the department depends upon the project-related funding we receive to hire visiting researchers and support staff who undergraduates need near them to turn out high-quality research.”

One of those agencies is NASA. Cadets and faculty are continuing their NASA research this semester, testing several components of that agency’s next-generation manned spacecraft. Cadet-directed research also continues in propulsion, enough UAVs to fill an edition of Jane’s All The World’s Aircraft, and even aerodynamic applications of plasma actuators.

## **ASTRONAUTICS**

High-quality undergraduate research continues at a slightly higher altitude with the rocket and satellite programs that are capstone projects in what is the nation’s first separate department of Astronautics.

“The Academy was the first college or university in the nation to have a separate department for astronautics (established by General McDermott in 1959 before the first

graduating class) and a separate, accredited aeronautical engineering major,” said Col. Marty France, head of the Department of Astronautics.

“Since that time, our cadets’ and department’s accomplishments have set a standard that is unique for an undergraduate program. Just in the past year, we’ve launched and operated a satellite: FalconSAT-3; designed, built, and launched a 200-pound sounding rocket to over three times the speed of sound; begun the design and construction on another satellite; taken over operation of a NASA scientific satellite; published more than a dozen technical papers -- both students and faculty -- winning awards at the state, national and Air Force levels; made presentations at national and international conferences, and earned graduate scholarships to some of this nation’s finest universities,” added the colonel, Class of 1981.

The value of the Astronautics department’s satellite and rocket programs are felt well beyond the department’s laboratories and offices.

“FalconSAT and FalconLaunch provide our cadets with a capstone experience--a glimpse into how the real world and real Air Force works,” said Col. France. “I returned from Los Angeles Air Force Base on Friday. Speaking with the lieutenants there who are currently working on multi-million and multi-billion dollar space projects, they all point to the lessons they learned in these two programs as most important to helping them do their jobs well today. There’s no better testimony for supporting our outcomes than that!”

The Astronautics department also added a new program, dubbed “Space For All,” giving cadets the opportunity to control the Academy’s ever-increasing satellite fleet and learn about the many applications of space early in their Academy career.

“‘Space For All’ exposes cadets to space-related possibilities and opportunities much earlier in their career than in past years. They’re seeing first-hand why space is important to them and the Air Force. We think it will motivate them to see the big picture and appreciate all that space brings to the table, regardless of their future major or career field,” said the colonel.

## **ONE COMMON ELEMENT**

But there’s one common element to the success in programs, new benchmarks, continued achievements and a commitment to excellence that are all reflected in these latest rankings. Once the books are closed, papers are submitted and critical design reviews complete, it’s the people behind the scenes that make these programs a success, say the department heads.

“You just can’t set aside the people. The continuing excellence of our faculty, staff and our devoted cadets make all of this possible. We’ve got people that just don’t settle for the status quo,” said Colonel France. “In fact, the drive of our people to clear the next hurdle, improve the next system, teach better every day is our greatest asset. It’s this same drive that other organizations recognize resulting in offers of funding, cooperative efforts, and invitations to present our work.”

That commitment by faculty and staff is essential for continued success in departments and academic majors that cadets generally regard as two of the toughest ever to exist at the Academy.

“For those 65 or so cadets who choose each year to become Aero majors, we inspire them to embrace the interesting but very difficult subject material. The (Aeronautics) department has a well earned reputation for going the extra mile to help the cadets get back on track when they struggle or fall behind,” said Dr. Byerley. “Our department is a team which includes traditional military and civilian teaching faculty but also visiting researchers, laboratory technicians and enlisted personnel. We get to know each Aero major as an individual so that we can mentor them into officers of character with a rich, hands-on, top-notch education in aeronautical engineering. At the end of four years, our graduates are pumped up about becoming second lieutenants and contributors to the Air Force team they are about to join.”

That commitment to excellence benefits not just current cadets and existing programs, but those who are considering the Academy as their next destination.

“Applicants should expect an education that is second to none, leading to a rewarding Air Force career in service to our nation, where they are an integral part of something larger than themselves,” said General Born. “Applicants should rightfully expect an authentic commitment to excellence from every Academy member, regardless of rank or position. The cadets are our mission; cadet success is our success. We are dedicated to develop leaders with responsibilities, knowledge, and skills to excel in a global, technical, complex, ambiguous and dynamic environment. Academics are an integral part of this process, but our faculty invests in the cadets far beyond the classroom setting. I’m especially proud of how Academy faculty are committed to cadet development outside of the traditional classroom.”

Hundreds of faculty interact with the cadets in countless other arenas such as on the athletic fields, in cadet clubs and extracurricular activities, and as sponsors.

“The Academy attracts our nation’s best and brightest because it has so much to offer. From appointee orientation to graduation day, the faculty’s singular purpose is to develop leaders of character who embody our core values and have the knowledge, skills, and responsibilities to serve in the 21<sup>st</sup> century as officers and citizens,” said the Dean.

## **Princeton Review: Academy Profs Most Accessible**

By John Van Winkle, Academy Public Affairs

The Air Force Academy’s professors are the most accessible in the nation for the third year in a row, according to *The Best 366 Colleges* text, released Monday by Princeton Review.

Faculty availability is an expectation at a military service academy.

“We are fortunate that we can maintain an 8:1 student-faculty ratio, which is a direct result of the commitment our senior leadership continues to demonstrate to this institution,” said Brig. Gen.

Dana Born, Dean of Faculty. “The low student-to-faculty ratio allows us to purposefully and consistently involve cadets in the learning process.

“Over the past three years, we have been working towards embedding a learning-focused educational approach to create experiences that more fully engage our cadets in active and enduring learning. The learning-focused approach is centered on the student; how they engage and what they learn. A low student-faculty ratio should logically lead to cadets experiencing growth in the classroom versus simply showing up every day as a spectator.”

Several academic departments here also staff extra instruction laboratories throughout the academic day, with at least one professor available each class period to help cadets tackle questions arising from their latest lessons.

“Extra instruction -- the time a cadet spends with his or her instructor outside the traditional classroom setting -- is an essential part of our Academy instructor culture,” said the general. “Our instructors have a genuine passion for cadet learning and the cadets undoubtedly recognize the advantages that result from focused one-on-one interaction. Graduating cadets consistently recognize faculty as having the greatest influence on their development and on their overall Academy experience.”

The Academy also came out in several other top-20 rankings in the nation, including:

- #1 Don't Inhale
- #7 Stone-Cold Sober Schools
- #9 Future Rotarians and Daughters of the American Revolution
- #11 Students Most Nostalgic for Reagan
- #11 Is it Food?
- #14 Everyone Plays Intramural Sports
- #14 Their Students Never Stop Studying
- #16 Scotch and Soda, Hold The Scotch
- #19 Students Pray on a Regular Basis
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The Princeton Review features the Academy and other local colleges in *The Best 366 Colleges*, the new 2008 edition of its annual "best colleges" guide.

The guide utilizes online student surveys in 62 categories to assess the academic, administrative, quality of life, social, extracurricular and other aspects of life at American colleges.