GET OUT!
Fill your datebook with this downtown go-to guide

TRULY A GLASS ACT
Delicate art form clearly becomes popular

Love at First Flight
Aviation careers, culture draw talent to region

SPONSORED BY THE WICHITA METRO CHAMBER OF COMMERCE
Testing: One, Two, Three

NIAR Bolsters Area's Status as Global Leader in Aviation

With five centers of research excellence, the National Institute for Aviation Research at Wichita State University is a globally recognized powerhouse that bolsters the area's lofty status as the aviation industry's leader.

"NIAR is quite unique because it's a university-based center, but it doesn't act like any other university-based center that I'm aware of. We're collaborating with industry for a product that industry can use," explains NIAR Executive Director John S. Tomblin. "Most of the research that universities do is considered basic research, which sometimes takes years to integrate into industry use. NIAR does just the opposite of that. We're conducting research that's applicable to products out today or out in the very near future."

NIAR draws upon its advisory board of aviation business experts to ensure that its activities meet the industry's needs. One example of answering that call is NIAR's recently added DO-160 certification capabilities. While adhering to DO-160 guidelines, developed by the Radio Technical Commission on Aeronautics, isn't an FAA requirement, it is recommended. NIAR's combination of 22 environmental laboratories allows manufacturers to perform DO-160 testing in one location for "air readiness assurance," Tomblin says. Aircraft and parts are subjected to a variety of extremes, including temperatures, altitude, shocks and vibration, explosions, fluids, sand and dust, fungus, salt, voltage spikes, electrostatic discharge, fire, lightning and more. That's probably why Tomblin dubs these testing facilities the "shake and bake laboratories."

NIAR labs are also at the nation's forefront in the study and application of composites and advanced materials used in aircraft manufacturing.

"This change of primary materials is directly related to an extreme push to get more and more efficiency out of aircraft. That's particularly related with what we see now regarding fuel costs," Tomblin says, adding that Wichita is one of only seven places in the world identified as a "composite cluster." That means the business environment includes original equipment manufacturers and suppliers at all levels.

NIAR is also taking its composite-materials research in an unexpected — and potentially life-altering — direction. Because composites are strong, flexible and lightweight, they just may be well suited for internal and external orthopaedic devices.

"We're proposing to create a center here, which we call the Center of Innovation for Biomaterials and Orthopaedic Research," Tomblin says. "The beauty about this is that the composite manufacturing base already exists in Wichita, so all we have to do is turn their attention to another industry other than focusing solely on the aerospace industry."

Now that's an economically healthy turn of events. For more information, visit www.niar.wichita.edu.
The Sky's the Limit

WICHITA FULFILLS REPUTATION AS "AIR CAPITAL OF THE WORLD"

When Clyde Cessna built Wichita's first plane in 1917, maybe he knew it was the start of something big. Yet even Cessna might not have envisioned today's Wichita, known as the "Air Capital of the World" and home to burgeoning aircraft companies employing thousands of the most talented engineers on the planet.

According to a Milken Institute study, Wichita has the highest concentration of aerospace employment and skills in the nation. About 61 percent of the Wichita area's manufacturing jobs - or more than 40,000 people - are in the aerospace industry. Wichita giants Cessna Aircraft Co., Hawker Beechcraft Corp. and Bombardier Aerospace Learjet deliver more than half the nation's general-aviation planes. Also at home in Wichita are Boeing, Spirit AeroSystems, an Airbus engineering center, a network of tier one suppliers and scores of precision machine shops.

"The specialization in the workforce just doesn't exist anywhere else. It's only in Wichita," says Tom Aldag, director of research and development at the National Institute for Aviation Research at Wichita State University.

NIAR's cutting-edge research and Wichita State's renowned engineering programs will soon join with the Wichita Area Technical College at the new, $54 million National Center for Aviation Training, a facility that will open for classes in 2010 at Jabara Airport in northeast Wichita. In the meantime, the Wichita Metro Chamber of Commerce has several initiatives in place to nurture the aviation industry and lure top-notch professionals here.

Once people visit Wichita, it's an easy sell, thanks to an enviable quality of life that includes a vibrant downtown and an easy commute.

"Getting around Wichita is so easy. It's 15 to 20 minutes to get anywhere, no matter where you live. Because of that, you can really get out and enjoy all of the entertainment that's offered in what we call 'hot spots' all over the city," says Olivia Simmons, vice president of the Greater Wichita Convention & Visitors Bureau.

The city boasts a wealth of cultural, natural and entertainment options, from the burgeoning Tallgrass Film Festival to the Kansas Flint Hills located nearby.

"Literally, you can immerse yourself in the sights and the sounds of the outdoors," Simmons says. "Not too many cities can brag about what's so close to them and what they have within their city at the same time."

The result? Wichita is flying high.

The Walter H. Beech Memorial Wind Tunnel at NIAR was originally built in 1948 and underwent a $6 million renovation in 2005.
Wichita... Engineered for Excellence

The sky’s the limit for aviation professionals

Rich culture, rewarding careers
believes the hand-in-glove work of his research institute and the aviation training center in the same spot, using state-of-the-art equipment supplied by local industry, can cut the implementation time to one to three years.

In some cases, the transfer of research to training could be almost instantaneous, Bloomfield says. One initiative will lead to diagnostic tools, such as CT scans, that can inspect aircraft for problems without the need to take them apart.

Gustaf said the Sedgwick County Technical Education & Training Authority, which oversees his college and all area technical education, played the galvanizing role in conceiving the project, designing the aviation center with industry input and issuing bonds for construction.

The investment will be a wise one, says Vicki Pratt Gerbino, president of the Greater Wichita Economic Development Coalition.

"If any place in the world should have an NCAT-type facility, it's Wichita," she says. "We need to ensure a steady pipeline of new, trained personnel for our local aircraft industry. It's simply a smart investment in our economic future."

![Image]

"If any place in the world should have an NCAT-type facility, it's Wichita."

VICKI PRATT GERBINO
PRESIDENT, GREATER WICHITA ECONOMIC DEVELOPMENT COALITION

John S. Tomblin, executive director of the National Institute for Aviation Research, says that NIAR officials look forward to a research and training role with the newly created National Center for Aviation Training.

**Connecting to Cutting-Edge Jobs**

Andy Solter witnessed the wonder of it in Wichita: When students from low-income families saw their coursework converge with concrete jobs, lightbulbs blazed on and performance soared.

Now, Solter and his Kansas Career Pipeline staff witness lightbulb moments statewide - 30,000 career assessments the first school year - as the Internet-based learning community creates training profiles to take Kansans from their first 'what-I-want-to-be-when-I-grow-up' moment to retirement.

The pipeline and its resources are accessible by logging onto [www.kansascareerpipeline.org](http://www.kansascareerpipeline.org).

Businesses are boarding the pipeline, too. In June 2008, they began pre-qualifying job applicants, posting videos and creating scholarship and internship opportunities on the Web site.

"No. 1, it gives them an immediate recruiting tool to start posting their jobs," says Karen Cox, marketing director for the private, not-for-profit pipeline.

"Secondly, and this is the part that's extremely exciting, we're connecting them with their future workforce."

Interaction begins as early as fifth grade, when students begin probing careers online. They take assessments of their career leanings in seventh grade.

Solter formed the pipeline after a federally funded career program for students in lower-income families ended at Wichita Public Schools. He huddled with the Kansas Department of Education, the Kansas Board of Regents and the Kansas Department of Commerce to see if an online model could connect the business community with future employees.

After initial state funding, the pipeline's $1.5 million 2008-09 budget will increasingly rely on annual business sponsorships from $50 to $30,000.

"There may be other states who are beginning to do this," Solter says. "If so, I salute them, because it really is a critical part of helping kids find things they're interested in."

- Gary Perilloux
Affirming an Aviation Legacy

$54 MILLION TRAINING CENTER ENSURES PIPELINE OF HIGHLY SKILLED WORKERS

STORY BY GARY PERILLOUX
PHOTOGRAPHY BY TODD BENNETT

S
ome 97 years after Clyde Cessna crafted his first Kansas plane, the manufacturing company that bears his name riveted the aviation world with news it would build its boldest business jet ever in Wichita.

It's a day the founder of Cessna Aviation Co. could only dream of: $780 million invested to develop Citation Columbus jets, with another $74 million in annual payroll and 1,000 new jobs to drive Cessna's Wichita work force past 11,000.

Yet even before the April 2008 announcement made headlines, a critical piece of Cessna's plans to build the jets began coming out of the ground.

At Jabara Airport - a general aviation facility in northeast Wichita - construction started a month earlier on the National Center for Aviation Training. At $54 million, the 220,000-square-foot center will steep students in avionics, robotics, composites manufacturing and other 21st-century aviation disciplines.

Cessna will lean heavily upon the new center to build its $27 million jet, Spirit AeroSystems Holdings, Hawker Beechcraft Corp., The Boeing Co., Bombardier Aerospace Learjet, Airbus North America Engineering Inc. and other Wichita mainstays will also tap the facility when they look to fill 15,000 new aerospace jobs projected for the area over the next decade.

That growth will push Wichita's aviation employment beyond 50,000 and into a new frontier.

"You take Spirit, for example," says Pete Gustaf, president of Wichita Area Technical College, which will manage the training center. "The workers there have lab coats on and work on the forward composite section of a 787 in a 100-yard clean room. It's a little different than pounding rivets in a 100-degree warehouse."

That difference is why John Tomblin's 300-member National Institute for Aviation Research staff will launch its resources as the center opens in 2010 to help prepare 1,500 students at a time.

"We have a research and training role," says Tomblin, the institute's executive director and Sam Bloomfield Distinguished Professor of Aerospace Engineering at Wichita State University. "If you think of research as a continuum, you're always going to start out with a research project. And the last piece of that continuum is always going to be training."

That continuum - as with friction stir welding techniques for aircraft - typically takes 10 years or more. Tomblin

Composite material research is just one area of study at the National Institute for Aviation Research.
VIA CHRISTI AND WSU TEAM UP TO TRANSFORM ORTHOPAEDICS WITH COMPOSITE TECHNOLOGY

Wichita's Via Christi Health System is proving to be the hippest joint in town. The state's largest provider of health-care services is revolutionizing the orthopaedic industry through the creation of bioengineered implants. Unlike their solid, metal predecessors known to weaken bone mass, the new implants encourage bone-cell growth and are made of the strong, lightweight composites used in the aviation industry.

"Our goal is to create devices that will last longer and, when implanted, function much like patients' original hips and knees," says Dr. Paul Wooley, director of research at Via Christi's Orthopaedic Research Institute and research professor at Wichita State University. "While it takes some time to get started, in the long term we expect our work to result in vastly improved implantable hips and knees made from composite materials."

As the former director of research for orthopaedic surgery and professor of orthopaedic surgery, immunology and microbiology, and biomedical engineering at Detroit's Wayne State University Medical School, Wooley was recruited by Via Christi in 2007 after academics at WSU and Via Christi teamed up to discuss the possibilities. In March 2008, Via Christi's Orthopaedic Research Institute opened a biocompatibility lab at WSU, which also is home to the National Institute of Aviation Research.

"This is a great location, because we have everything here that we need: WSU's National Institute of Aviation Research and ORI, along with composite manufacturers, WSU's biologists, engineers and chemists, and close connections with implant manufacturers," Wooley says. "We're trying to involve everyone in the project, so we can address questions and fix any problems rapidly, as we go along."

Their work is projected to attract at least $5 million in new external research to Kansas over the next five years. The project comes with a lofty price tag, with much of its funding from the Kansas Bioscience Authority, an independent state entity. In April 2008, the KBA awarded $912,000 to Via Christi's ORI and WSU to support the creation of their orthopedic immunogenetic laboratory. Via Christi also was granted part of a KBA planning grant of $200,000 to prepare a $50 million, 10-year design and development plan.

"Given the level of excitement about the project within the industry and community, I feel confident that, one way or another, this project will move forward," Wooley says. "This plan was well under way long before my arrival in Wichita, so the whole project has been of great importance to the surgeons, scientists and Via Christi administrators for a number of years."

- Melanie Hill