



**LIFE SCIENCES  
GREENHOUSE  
of Central Pennsylvania**  
*Accelerating Commercialization of  
Discoveries in the Life Sciences*

# Accelerator

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# A Primer on Angel Investors



**Angel investors** are individuals who invest in businesses with the aim of achieving a higher return than they would typically see from more traditional investments. Many are successful entrepreneurs who also want to help other entrepreneurs get their business off the ground.

Usually they are the bridge from the self-funded stage of the business to the point that the business needs the level of funding that a venture capitalist would offer. Funding estimates vary, but usually range from \$25,000 to \$1.5 million.

The term “angel” comes from the practice in the early 1900’s of wealthy businessmen investing in Broadway productions. Today “angels” typically offer expertise, experience and contacts in addition to money. Less is known about angel investing than venture capital because of the individuality and privacy of the investments, but the Small Business Administration estimates that there are at least 250,000 angels active in the country, funding about 30,000 small companies a year. The total investment from angels has been estimated at anywhere

from \$20 billion to \$50 billion as compared to the \$3 to \$5 billion per year that the formal venture capital community invests. In fact, the potential pool of angel investors is substantially larger. There are about two million people in the United States with the discretionary net worth to make angel investments.

The Center for Venture Research at the University of New Hampshire, which does research on angel investments, has developed a profile of angel investors that suggests:

- Nine out of 10 investments are devoted to small, mostly start-up firms with fewer than 20 employees.
- There appears to be no shortage of angel funds. Investors included in the study would have invested almost 35% more than they did if acceptable opportunities had been available.
- The most common reasons given for rejecting a deal are insufficient growth potential, overpriced equity, lack of sufficient talent of the management, or lack of information about the entrepreneur or key personnel.
- Investors believe that about one-third of their investments are likely to result in a substantial capital loss.

- Most angels invest close to home – seven out of 10 investments are made within 50 miles of the investor’s home or office – and rarely put in more than a few hundred thousand dollars.

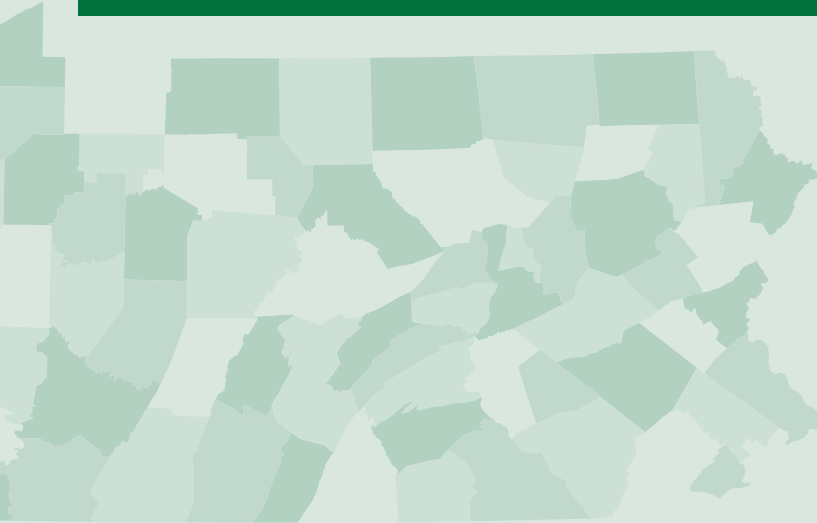
*If you are receiving this publication in error, or wish to be removed from our mailing list, please contact [info@lsgpa.com](mailto:info@lsgpa.com).*

*For information about funding opportunities and business support services provided by the Life Sciences Greenhouse of Central Pennsylvania, visit us online at [www.lsgpa.com](http://www.lsgpa.com).*

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# PaSDC: The Pennsylvania State Data Center

A RESOURCE FOR BUSINESS, GOVERNMENT AGENCIES, AND OTHERS



**The Pennsylvania State Data Center (PaSDC)** serves as Pennsylvania's official source of population and economic statistics and as the Commonwealth's official liaison to the U.S. Census Bureau. Its mission is to ensure the availability of timely, accurate and useful information through a network of state agencies, universities, libraries, regional and local governments, and other organizations. Each year, the PaSDC serves businesses, non-profit organizations, government agencies, and individuals by answering more than 15,000 requests for information. In addition to answering requests via telephone and email, the PaSDC develops many publications, offers state-wide training sessions, workshops and mapping services, and provides customized reports, research dissemination and media services.

The PaSDC's most popular publications include the *Pennsylvania Abstract*, *A Statistical Fact Book*, and the *Pennsylvania County Data Book*. These publications provide information on population, employment, commerce, agriculture, transportation and much more compiled from state and federal agencies for Pennsylvania and each of its 67 counties.

The PaSDC also offers several training opportunities. The monthly Census Data Workshops assist users in finding, working with, and understanding the large amount of data now available through the U.S. Census Bureau Web site. The workshops offer training in Census terminology and geography, locating and downloading 1990 and 2000 Census data via American FactFinder, and finding data in other Census programs such as Economic Census, Population Estimates, and the American Community Survey.

The Economic and Workforce Development Data Workshops address a need in the Economic Development community for finding and understanding data useful for developing effective strategies and identifying new opportunities. In addition to providing information on the 1990/2000 Census, these specialized workshops provide training on locating and downloading data from the Economic Census, County Business Patterns, Local Employment Dynamics, Housing Unit Estimates, and more. ▼

For more information about the PaSDC and its products and services, please visit [PaSDC.hbg.psu.edu](http://PaSDC.hbg.psu.edu) or call 717-948-6336.

events calendar

## S E P T E M B E R

6-7

Life Sciences SBIR/STTR Workshop

Hershey, PA

[www.HersheyResearch.com/events/training07.html](http://www.HersheyResearch.com/events/training07.html)

13

Pennsylvania Bio's CEO Roundtable

Malvern, PA

[www.pennsylvaniabio.org](http://www.pennsylvaniabio.org)

## O C T O B E R

8-9

BioTech 2007: Imagine. Collaborate. Innovate.

Philadelphia, PA

[www.biotech2007.org](http://www.biotech2007.org)

# FDA Grants Clearance to INRange Systems' Electronic Medication Management Assistant



In June, Altoona-based **INRange Systems, Inc.**, announced that the Food and Drug Administration granted clearance for the marketing and selling of **EMMA, the Electronic Medication Management Assistant.**

**EMMA** is the first and only medical device commercially available for in-home medication management that can select and deliver individual doses of medicine. It works much like an ATM, which selects and delivers bills of varying denominations. The device is about the size of a microwave oven, and can hold a month's supply of up to ten prescriptions. Multiple **EMMA** units may be connected together to increase the number of managed prescriptions. Unlike automated pill boxes, reminder systems, and other similar devices, **EMMA** is web-enabled, giving pharmacists, nurses, doctors, or other licensed practitioners the ability to schedule



medications, monitor compliance, and alter individual doses with the click of a mouse.

This is expected to reduce the cost of in-home medication management and the number of preventable injuries caused each year by medication errors and patient non-compliance. Furthermore, **EMMA** eliminates the labor intensive and inherently inaccurate practice of manually filling and reorganizing pill boxes.

### ***How Does EMMA Work?***

Prescriptions and refills, packaged in standard-sized blister cards, are loaded into **EMMA** much like a CD is loaded into a car or home stereo. **EMMA** identifies each medication by its barcode; no input is required by the patient. When it's time for patients to take their scheduled medications – as determined by the programmed schedule entered at the pharmacy or



clinic – **EMMA** automatically provides both a visual and audible alert. A simple touch of the screen dispenses the correct prescription medications into the built-in tray. A single electronic Medication Administration Record ensures that multiple caregivers can be alerted to change a dose or medication, and prescriptions or refills can be sent automatically to the patient's residence.

### ***Benefits of Improved Medication Management***

Chronic disease management often means medication management, and proper medication management is an enormous problem facing the health-care industry, particularly in light of impending shortages of both pharmacists and nurses, and an aging population. A recent report by the Institute of Medicine (IOM) estimates that there are 1.5 million preventable injuries annually caused by medication errors

# Medication Management Assistant – EMMA™



EMMA™  
Electronic Medication Management Assistant



(1). The IOM estimates that every year, 218,000 people die because of prescription drug errors and adverse drug events (AEs)(2). Fatalities aside, recent estimates place the total annual cost of “medication misadventures” at over \$177 billion(3). In response to increasing AE’s, many managed care organizations send home nurses into the patient’s home to manually fill and reorganize pill boxes. As the population continues to age, this practice will become unsustainable. Though senior citizens are not the only patients requiring assistance with medication management, there are

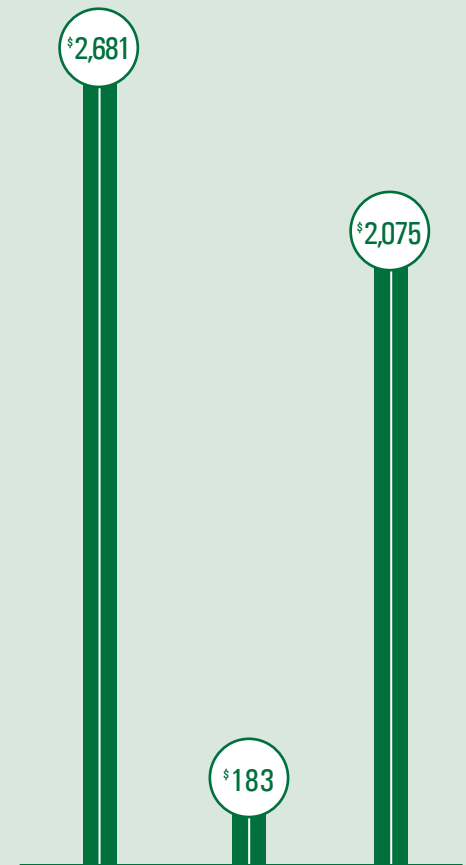
currently more than 35 million Americans over the age of 65. Another 78 million baby boomers are entering their 60’s at a rate of 7,918 per day(4). As a result of this enormous burden on the healthcare system, it is projected that by 2020, there will be a shortage of more than 1 million nurses (5) and 150,000 pharmacists(6).

*LSGPA has invested \$750,000 from its Tech Development and Gap funds into INRange Systems, Inc. To learn more about the company, visit [www.inrangesystems.com](http://www.inrangesystems.com) ▼*

In August, the **National Venture Capital Association (NVCA)** and **PriceWaterCoopers** reported that venture capital investment volume in Q2 2007 was at its highest level since 2001.

## What that meant for the life sciences sector:

(Amounts shown in millions)



Industry & Amount Invested  
(2007 Year to Date)

**Biotechnology**  
**\$2,681,658,400**

**Healthcare Services**  
**\$183,121,800**

**Medical Devices & Equipment**  
**\$2,075,573,500**

*The National Academies, July 20, 2006 – Medication Errors Injure 1.5 million People and Cost Billions of Dollars Annually. <http://www8.nationalacademies.org/onpinews/newsitem.aspx?recordid=11623>*

*Ernst, Frank R., Grizzle, Amy J.: “Drug-Related Morbidity and Mortality: Updating the Cost of Illness Model”; *Journal of American Pharmaceutical Association* 2001: 41(2)192-199*

*Ibid*

*US Census Bureau, CB06-FFSE.01-2, January 3, 2006, [http://www.census.gov/Press-Release/www/releases/archives/facts\\_for\\_features\\_special\\_editions/006105.html](http://www.census.gov/Press-Release/www/releases/archives/facts_for_features_special_editions/006105.html)*

*US Department of Health and Human Services, What is Behind HRSA’s Projected Supply, Demand, and Shortage of Registered Nurses? <http://bhpr.brsa.gov/healthworkforce/reports/behindrnprojections/index.htm>*

*Pharmacy Manpower Project, <http://www.pharmacymanpower.com/>*

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For the business seeking funding, the right angel investor can be the perfect first step in formal funding. It usually takes less time to meet with an angel and to receive funds, due diligence is less involved, and angels usually have fewer onerous deal terms than a venture capitalist.

### **What Does an Angel Investor Expect?**

There are almost as many answers to what angels expect as there are angels, so carefully structuring relationships is important. All want good communication – although for some that means quarterly reports, while for others that means weekly updates. Return objectives vary. Not uncommon would be projections ranging from an internal rate of return of 30% over five years to sales projections of \$20 million in the first five years to the potential return of five times investment in the first five years.

Some want securities, either common stock or preferred stock with certain rights and liquidation preferences over common stock. Some ask for convertible debt, or redeemable preferred stock, which provides a clearer exit strategy for the investor, but also places the company at the risk of repaying the investment plus interest. Additionally, the repayment may imperil future financing since those sources will not likely want to use their investment to bail out prior investors.

Some angels ask for the right of first refusal to participate in the next round of financing. While this sounds eminently reasonable, some venture capitalists will want their own players only or certain investment minimums so this strategy may limit who future participants might be.

Many want a board position and possibly a consulting role. In this case, future

representation of the board of directors will need to be clarified. When a new round of financing occurs, do they lose their board right, or should that be based on a percentage ownership – when their ownership level drops below a certain level, they no longer have board representation?

In order to protect their investment, angels often ask the business to agree to not take certain actions without the angel investors' approval. These might include selling all or substantially all of the company's assets, issuing additional stock to existing management, selling stock below prices paid by the investors or creating classes of stock with liquidation preferences or other rights senior to the angels' class of security. Angels could also ask for price protection; that is, anti-dilution provisions that will result in their receiving more stock should the business issue stock at a lower price than that paid by the angels.

To prepare to solicit an angel, several critical factors will aid in making the approach successful. First, assemble a group of advisors that includes an accountant and corporate attorney. Ideally, both will have prior experience with startup firms and angel financing. The business plan should define the reason for financing, how the capital will be spent and the timetable for going public, seeking venture capital funding, or achieving profitability. It should include: an executive summary (description of the business, opportunity and strategy, target market, projections and competitive advantages); the industry, the company and its products and services (including entry and growth strategies); market research and analysis (customers, market size and trends, competition, estimated market share and sales); the economics of the business (including gross and operating margins and break-even analysis); marketing

plan (overall strategy, pricing, advertising, promotion, and distribution); design and development plans (product/service improvement and new products/services); manufacturing and operations plans (geographic location, facilities and capacity improvements); management team (organization overview, biographies and compensation plans for key employees); financial plan (tax returns, profit and loss forecasts, pro forma cash flow analysis and balance sheets, 5-year projections); and proposed company offering (desired financing, securities offering, capitalization, timetable).

Most of all, entrepreneurs are advised to take time forming a relationship with an angel. The angel and entrepreneur will be spending a number of years together at a critical time in the business's life. Both should take the time to assure themselves that they are comfortable enough with each other to weather the ups and downs the future may bring. ▼

### **RECOMMENDED READING**

#### ***Are you interested in learning more about angel investing?***

If so, consider these works suggested by the Angel Capital Association ([www.angelcapitalassociation.org](http://www.angelcapitalassociation.org))

- ***Angel Financing for Entrepreneurs: Early Stage Funding for Long-Term Success*** by Susan L. Preston
- ***Attracting Capital From Angels: How Their Money and Their Experience Can Help You Build a Successful Company*** by Brian E. Hill and Dee Power
- ***State of the Art: An Executive Briefing on Cutting-Edge Practices in American Angel Investing*** by John May and Elizabeth F. O'Halloran

## OPENING SOON : Ben Franklin TechVentures

**Ben Franklin TechVentures**, a new high-tech workspace and community for early-stage companies, is scheduled to open later this month. Located on the Mountaintop Campus of Lehigh University and born out of the former Bethlehem Steel Homer Research Labs, the facility boasts 35,000 square feet of rentable space (including 11,000 square feet of wet lab space) and satisfies the growing appetite for incubator space and affordable wet laboratory facilities in the region.

Years in planning, TechVentures brings new life to an historic facility that was once the seat of research and innovation for Bethlehem Steel, one of the most famous industrial companies of the 20th century. Ben Franklin Technology Partners of Northeastern Pennsylvania (BFTP/NEP) has reclaimed the site and is nearing completion of renovations that will facilitate its use by early-to-mid stage technology companies.

The original Ben Franklin Business Incubator, located in a smaller facility across the street from TechVentures, was at capacity for most of its quarter-century in operation. Ben Franklin TechVentures doubles the available wet lab space and more than triples the office and dry laboratory space available over the original building.



*BFTP/NEP is an initiative of the Department of Community and Economic Development and is funded by the Ben Franklin Technology Development Authority. Support for the project was provided by Northampton County, Lehigh Valley Economic Development Corporation, the City of Bethlehem, the Pennsylvania Department of Community and Economic Development, and the Life Sciences Greenhouse of Central Pennsylvania.*

### **The facility will include:**

- Full safety and environmental compliance for all facilities
- Flexible floor planning to accommodate specific needs
- Five conference rooms with state-of-the-art AV capabilities
- 24/7 secured access and video surveillance
- Innovative use of technology to foster community among tenants
- Rental rates substantially less than market rates
- Available state-of-the art high-speed Internet and telephone facilities
- Access to the facilities, equipment, staff, and student resources of Lehigh University

### **In addition, all new wet labs will include:**

- Hooding and ventilation systems
- Liquid chemical disposal systems
- Chemical-resistant countertops and floor coverings
- In-lab emergency showers
- Lab connections available for installation of specialty gas tanks
- Centralized vacuum and compressed air lines

Tenants may also take advantage of business support services provided by BFTP/NEP. For more information please visit [www.bftechventures.org](http://www.bftechventures.org) after September 20.