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INSPIRE

PHARMACEUTICALS INC

ANNUAL REPORT 2006

CORPORATE PROFILE

Inspire is a fully integrated biopharmaceutical company dedicated to discovering, developing and commercializing prescription pharmaceutical products in disease areas with significant commercial potential or unmet medical needs. Our goal is to build and commercialize a sustainable pipeline of new treatments based upon our technical and scientific expertise, focusing in the ophthalmic and respiratory/allergy therapeutic areas.

INSPIRE'S PRODUCT PORTFOLIO

Products MARKETED

Elestat®

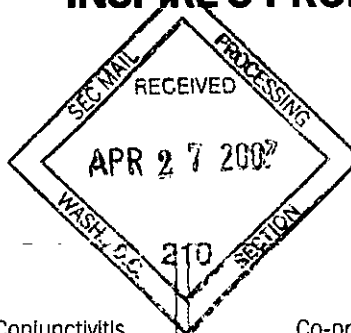
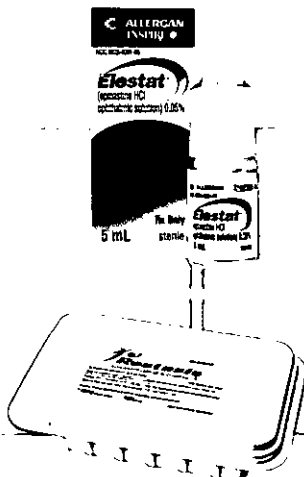
Allergic Conjunctivitis

Co-promoting

Restasis®

Dry Eye Disease

Co-promoting



Product Candidates in Clinical Development

OPHTHALMOLOGY

		PHASE 1	PHASE 2	PHASE 3	NDA FILED
AzaSite™	Bacterial Conjunctivitis			●	✓
Prolacria™	Dry Eye Disease			●	✓
INS115644	Glaucoma	●			

RESPIRATORY/ALLERGY

Bilastine	Seasonal Allergic Rhinitis			●	
Denufosol Tetrasodium	Cystic Fibrosis			●	
Epinastine Nasal Spray	Seasonal Allergic Rhinitis		●		

Inspire's U.S. specialty sales force promotes Elestat® (epinastine HCl ophthalmic solution) 0.05% and Restasis® (cyclosporine ophthalmic emulsion) 0.05%, ophthalmology products developed by Allergan, Inc. Elestat and Restasis are trademarks owned by Allergan. AzaSite™ is a trademark owned by InSite Vision Incorporated.

TO OUR STOCKHOLDERS

Throughout 2006, we focused on strengthening Inspire's business and expanding our product pipeline to position us for 2007 and beyond. We believe we have achieved this goal, most notably through an aggressive business development effort that yielded three new product opportunities in our core therapeutic areas of ophthalmology and respiratory/allergy. In addition to transforming our pipeline through the in-licensing of new product candidates, we made solid progress in the programs originating from our in-house research, grew revenues through effective promotional efforts, and reported solid financial performance in line with our goals for the year. We are pleased that this strategy, which was the culmination of a multi year process, has led to the creation of multiple catalysts that could potentially drive future stockholder value.



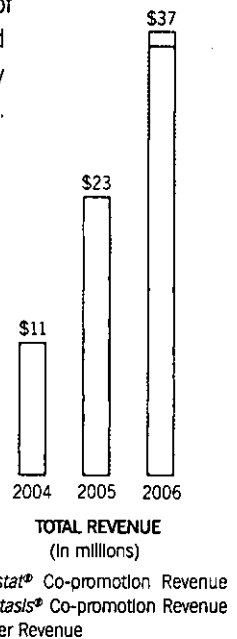
Christy L. Shaffer, Ph.D.
President and Chief Executive Officer

COMMERCIAL AND FINANCIAL SUMMARY

A key element of our strategy is to be a driving force in the commercialization of our products in North America. We have a highly effective specialty sales and marketing organization that currently calls on ophthalmologists, optometrists and allergists in the United States, detailing *Elestat* and *Restasis*, products developed by Allergan, Inc. and co-promoted by Inspire. In 2006, our commercial team generated revenue that not only covered commercial expenses but generated sufficient cash flow to help fund a portion of our R&D expense.

Through the excellent efforts of our commercial team, we expanded our revenue base by 59% to \$37 million. *Elestat* continues to be the second most prescribed U.S. allergic conjunctivitis product with a 10% share of prescription volume in the U.S. allergic conjunctivitis market, despite significant competition from entrenched competitors and a challenging managed care environment. Our revenues were also boosted by healthy prescription growth of *Restasis*, the only approved prescription product for dry eye disease in the United States. During the year, we continued to expand our investment in R&D, including spending that advanced our key clinical programs and broadened our product pipeline. For the full year of 2006, we reported a net loss of \$42 million, or (\$1.00) per share.

We ended 2006 with approximately \$102 million in cash and investments. Our cash utilization for the year was \$20 million and reflected a \$20 million cash infusion from a \$40 million debt facility we closed in December 2006. We entered into this debt facility to provide non-dilutive financing to support our recent in-licensing growth initiatives. Under this facility, we have an additional \$20 million available to fund certain future development expenses or milestone payments. Additionally, if we are successful with one or more of our late-stage development programs, we will likely raise capital in the next 12 months to support expanded commercial and development operations.



RESEARCH & DEVELOPMENT

Ophthalmology Franchise

- In February 2007, we announced an exclusive licensing agreement with InSite Vision Incorporated for the U.S. and Canadian commercialization rights to *AzaSite*™ (azithromycin 1% ophthalmic solution), a topical anti-infective product candidate for the treatment of bacterial conjunctivitis. InSite Vision has filed a New Drug Application (NDA) for *AzaSite* with the U.S. Food and Drug Administration (FDA), with a target response date of late April 2007.

.....○ **Bacterial Conjunctivitis** is an ocular surface microbial infection common in children. The infection is contagious and generally accompanied by irritation, itching, watering, mucus discharge and redness. Inspire licensed the rights to commercialize *AzaSite*™ for the treatment of bacterial conjunctivitis. The annual U.S. ocular antibiotic market is app. \$600 mm, including \$360 mm for single-entity products and \$245 mm for combination products. (Based on IMS Health data for the 12 months ended Dec. 31, 2006.)

Dry Eye is associated with aging, environmental factors, autoimmune disorders and various medications. Inspire is addressing this market by co-promoting *Restasis*[®] and developing *Prolacria*[™]. Inspire estimates that dry eye disease affects more than 30 million people in the eight major international prescription pharmaceutical markets, of which more than 9 million are in North America.

The addition of *AzaSite* to our late-stage product candidate portfolio leverages our therapeutic focus in ophthalmology, builds on the capabilities of our commercial organization and provides a sizable near-term revenue opportunity in addition to the revenue stream from *Restasis* and *Elestat*. *AzaSite* combines a well-known antibiotic and a patented ocular drug delivery system to provide a potentially more convenient dosing regimen than the products currently available to treat bacterial conjunctivitis.

- In our dry eye program for *Prolacria*[™] (diquafosol tetrasodium), we continue to work on identifying a mutually acceptable regulatory path forward. We have met with the FDA several times since December 2005, when we received a second approvable letter on *Prolacria*. We have utilized key clinical experts throughout this process to engage in a meaningful dialogue regarding the clinical aspects of the diagnosis and treatment of dry eye disease. During 2007, we will be working to validate the clinical relevance of a potential endpoint for a new clinical trial and expect to provide additional clarity around next steps for the *Prolacria* program. We are partnered with Allergan for the global commercialization of *Prolacria*, except in Asia, where we have partnered with Santen Pharmaceutical Co., Ltd. Santen is currently conducting Phase 3 clinical testing of diquafosol, or as they refer to it, DE-089.
- We continue to make progress in our glaucoma program, which represents an attractive target for new ophthalmic drug development. Our research labs have been evaluating a series of compounds that could potentially affect the trabecular meshwork and thereby improve the flow of aqueous humor out of the eye, which may lead to reduction in intraocular pressure. In the fourth quarter of 2006, we filed an Investigational New Drug application (IND) for the first compound in the series. In the first quarter of 2007, we began Phase 1 clinical testing in glaucoma patients to evaluate the safety and tolerability of this compound, as well as changes in intraocular pressure.

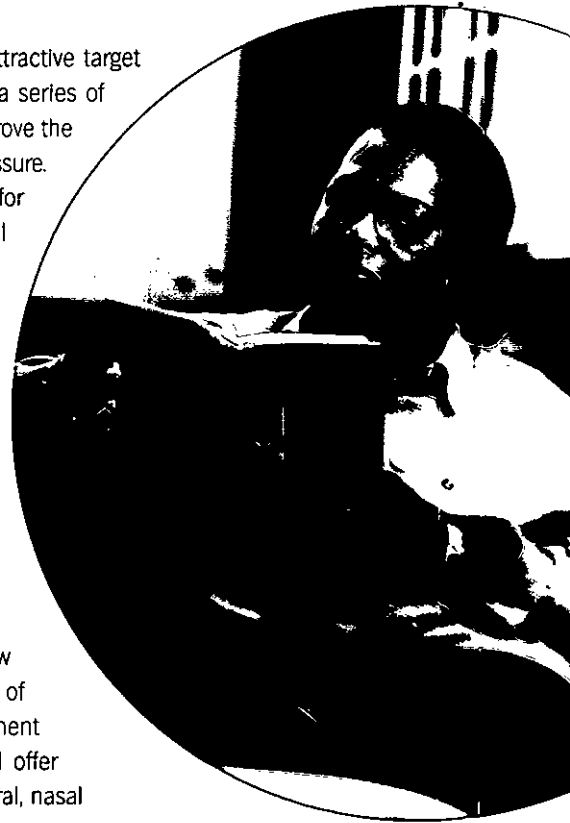
Respiratory/Allergy Franchise

- Bilastine is an oral, once-daily antihistamine compound that we licensed in October 2006 from FAES Farma, S.A. for U.S. and Canadian development and commercialization for the treatment of the symptoms of allergic rhinitis. This compound is in late Phase 3 development as FAES has completed Phase 3 trials and toxicology studies outside the United States.

The number of Americans who suffer from some form of allergy continues to increase. Many allergy sufferers use several types of prescription products to deal with their allergies. Surveys show that patients and physicians are interested in having new and multiple treatment choices that can better meet their needs. The addition of bilastine expands our allergy franchise and will leverage our clinical development and commercial expertise. If successful in our development efforts, Inspire will offer patients a range of prescription pharmaceutical products for allergies, including oral, nasal and ocular treatments.

- Our cystic fibrosis (CF) program is progressing as planned. In 2006, we initiated TIGER-1, our first Phase 3 pivotal trial of denufosol tetrasodium for CF lung disease. We expect to complete enrollment in this trial during 2007. In late 2006, we initiated a two-year inhalation carcinogenicity study in rodents, which is required by the FDA prior to a potential NDA filing. We expect to receive the final study report for this study in the second half of 2009.

We also continue to have discussions with regulatory agencies outside the United States regarding the clinical development and regulatory pathway for denufosol. In addition, we are continuing discussions with potential partners to develop and commercialize this product candidate outside of North America.





.....o *Allergies* affect more than 40 mm people in the United States annually. Inspire is focused on addressing three segments of the allergy market by co-promoting *Elestat*[®] for ocular allergies and developing bilastine as an oral tablet and epinastine as a nasal spray, both for allergic rhinitis. The annual U.S. market is app. \$3.1 bn for prescription oral antihistamine products, \$2.8 bn for nasal allergy products and \$520 mm for prescription ocular allergy products. (Based on IMS Health data for the 12 months ended Sept. 30, 2006.)

- In early 2006, we enhanced our allergy pipeline with the addition of epinastine nasal spray for allergic rhinitis, which we licensed from Boehringer Ingelheim International GmbH. Our experience with epinastine in the ocular formulation, known as *Elestat*, allows us to leverage our scientific knowledge of the molecule with a well-established pharmacological and tolerability profile. We moved the program forward throughout 2006 and by year-end, we initiated Phase 2 clinical testing to evaluate epinastine nasal spray in seasonal allergies.

In late 2006, we were pleased to add Nancy Hutson, Ph.D., former Senior Vice President, Global Research and Development of Pfizer Inc., to the Board of Directors. We believe Nancy's understanding of the drug development process and passion for scientific innovation will be invaluable to the direction and growth of Inspire. We also want to thank Alan Holmer for his valuable service on our Board. In early 2007, Alan stepped down from the Board to accept an appointment in the Bush administration as Special Envoy for China and the Strategic Economic Dialogue.

LOOKING AHEAD

In summary, we have created a therapeutically focused company, which is well-positioned for growth. We are a fully integrated biopharmaceutical company with innovative research, experienced development and proven commercial capabilities focused in the ophthalmology and respiratory/allergy therapeutic areas. We are generating an attractive and increasing revenue stream while preparing for future product opportunities. As the chart on Page 1 of this report depicts, our current product portfolio includes two marketed products, *Elestat* and *Restasis*, two product candidates currently under review by the FDA, two Phase 3 programs, one Phase 2 program and one Phase 1 program. We have a great team of dedicated employees who are focused on turning our many opportunities into value for stockholders. We look forward to reporting on the catalysts and events as 2007 unfolds.

Sincerely,

Christy L. Shaffer, Ph.D.
President and Chief Executive Officer

April 2007



.....o *Cystic Fibrosis* is a life-threatening disease involving a genetic mutation that disrupts the cystic fibrosis transmembrane regulator protein, an ion channel. In CF patients, a defect in this ion channel leads to poorly hydrated lungs and severely impaired mucociliary clearance. Inspire is developing denufosal tetrasodium for the treatment of CF lung disease. There are app. 75,000 CF patients worldwide, including 30,000 in the U.S.

CORPORATE INFORMATION

CORPORATE OFFICERS

MARY B. BENNETT
*Executive Vice President
Operations and Communications*

R. KIM BRAZZELL, PH.D.
*Senior Vice President
Ophthalmic Research and Development*

DONALD J. KELLERMAN, PHARM.D.
*Senior Vice President
Development*

JOSEPH K. SCHACHLE
*Executive Vice President
Chief, Commercial Operations*

CHRISTY L. SHAFFER, PH.D.
President and Chief Executive Officer

JOSEPH M. SPAGNARDI
*Senior Vice President
General Counsel and Secretary*

THOMAS R. STAAB, II
Chief Financial Officer and Treasurer

BENJAMIN R. YERXA, PH.D.
*Chief Scientific Officer and
Executive Vice President, Strategic Operations*

BOARD OF DIRECTORS

KIP A. FREY ⁽¹⁾⁽³⁾
*Partner, Intersouth Partners
Adjunct Professor, Duke University*

NANCY J. HUTSON, PH.D. ⁽²⁾
*Former Senior Vice President,
Global Research and Development
Pfizer Inc.*

RICHARD S. KENT, M.D. ⁽²⁾⁽³⁾
*Chief Executive Officer and President
Serenex, Inc.*

KENNETH B. LEE, JR. ⁽¹⁾⁽²⁾
*Chairman
Inspire Pharmaceuticals, Inc.
General Partner
Hatteras BioCapital, L.L.C.*

WILLIAM R. RINGO, JR. ⁽¹⁾
*Former Chief Executive Officer and President
Abgenix, Inc.*

CHRISTY L. SHAFFER, PH.D.
*President and Chief Executive Officer
Inspire Pharmaceuticals, Inc.*

⁽¹⁾ Audit Committee member

⁽²⁾ Compensation Committee member

⁽³⁾ Corporate Governance Committee member

CORPORATE HEADQUARTERS

Inspire Pharmaceuticals, Inc.
4222 Emperor Boulevard, Suite 200
Durham, NC 27703
www.inspirepharm.com
Ph: 919-941-9777 Fax: 919-941-9797

SECURITIES INFORMATION

Exchange: NASDAQ Global MarketSM
Symbol: ISPH

ANNUAL MEETING

Inspire's Annual Meeting of Stockholders will be held on Friday, June 8, 2007, at 9:00 a.m. E.T. at the North Carolina Biotechnology Center, 15 T.W. Alexander Drive, Research Triangle Park, NC 27709.

STOCKHOLDER INFORMATION

Copies of the Company's Summary Annual Report, Form 10-K, Form 10-Q, quarterly earnings release, or other information may be obtained free of charge through the corporate homepage, www.inspirepharm.com, or by calling 919-941-9777.

TRANSFER AGENT

Computershare Trust Company
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Golden, CO 80401
www.computershare.com
Ph: 303-262-0600 Fax: 303-262-0632

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PricewaterhouseCoopers LLP
150 Fayetteville Street, Suite 2300
Raleigh, NC 27601
Ph: 919-755-3000

CORPORATE COUNSEL

Reed Smith LLP
Princeton Forrestal Village, Suite 250
136 Main Street
Princeton, NJ 08543

SUMMARY ANNUAL REPORT

Inspire's 2006 Annual Report is presented in a summary format intended to provide information about Inspire Pharmaceuticals in a concise manner. The audited financial statements and additional detailed information are contained in Inspire's Annual Report on Form 10-K for the year ended December 31, 2006. Copies of the Form 10-K are being distributed to stockholders together with this 2006 Summary Annual Report.

FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements that present our expectations and plans regarding future performance, and these statements are subject to significant risks and uncertainties that could affect our future performance, including those relating to product development. Actual results could differ materially from those described herein. Information on various factors that could affect our results is detailed in our reports filed with the Securities and Exchange Commission.

INSPIRE 

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