

# ASSESSMENT OF A CONNECTICUT TECHNOLOGY SEED CAPITAL FUND/PROGRAM

A REPORT BY

THE CONNECTICUT ACADEMY  
OF SCIENCE AND ENGINEERING

## EXECUTIVE SUMMARY

ORIGIN OF INQUIRY: CONNECTICUT DEPARTMENT OF  
ECONOMIC AND COMMUNITY DEVELOPMENT

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This study was initiated at the request of the Connecticut Department of Economic and Community Development on June 1, 2005. The project was conducted by an Academy Study Committee with the support of Zachary Morowitz, Study Consultant and Joseph Raguso, ICF Consulting, Research Consultant. The content of this report lies within the province of the Academy's Economic Development Technical Board. The report has been reviewed by Academy Members Anthony J. DeMaria, PhD and William H. Koster, PhD. Martha Sherman, the Academy's Managing Editor, edited the report. The report is hereby released with the approval of the Academy Council.

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## EXECUTIVE SUMMARY

### STUDY OUTLINE

As one element of Connecticut's effort to identify strategies for strengthening its economic base and for attaining a leadership position in the rapidly changing global economy, the Connecticut Department of Economic and Community Development (DECD) commissioned the Connecticut Academy of Science and Engineering (CASE) in June 2005 to conduct a seed capital fund study. Guidance and advice were requested relative to the potential for enhancing the state's economic base through initiation of and/or participation in a seed capital fund to promote the growth of Connecticut-based emerging technology companies.

This study is consistent with, and was conducted within the context of, prior efforts and actions including:

- a report authored by Innovation Associates under DECD sponsorship and guidance, *A Prospectus for Technology Transfer and Commercialization in Connecticut*
- a report authored by the Battelle Technology Partnership Practice under sponsorship of the Connecticut Office for Workforce Competitiveness, *Building Upon Connecticut's Core Competencies in the Knowledge Economy*
- Public Act No. 05-129: *An Act Establishing a Connecticut New Opportunities Fund*
- Public Act No. 05-149: *An Act Permitting Stem Cell Research and Banning the Cloning of Human Beings*
- Public Act No. 05-165: *An Act Concerning Establishment of an Innovation Network for Economic Development*

To address the subject issue, CASE convened and chaired a Study Committee of experts that conducted a series of information exchange meetings, reviewed pertinent literature, and received written and oral reports from ICF Consulting on seed fund activities in other states and from Connecticut Innovations, Inc. (CI) on its seed funding experience and interests.

### STUDY CONCLUSIONS

The conclusions drawn from this study are presented below in the following six categories aligned with the DECD commissioned Statement of Work:

1. Strategic Framework
2. Funding Constraints and Requirements
3. Resources and Capital Base Required
4. Suggested Success Metrics
5. Potential Technology Target Areas
6. Candidate Organizations to Harbor/Manage Seed Funding

## 1. *Strategic Framework*

- The data collected indicate that it is reasonable to expect that the proper and efficient use of each \$1 million of seed-level funding will catalyze the start up of up to six technology-based enterprises, of which one or two will qualify for second-round support and potentially survive to eventually attain a financially successful and sustainable state. Low survival rates must be expected, but those that survive should be worth the investment.
- Seed funding needs to be of a sufficient level to: (1) encourage technologies that emerge from Connecticut individuals and organizations to find a commercial home within the state; (2) motivate technical talent that is currently within the state to stay here; and (3) attract technologies, technologists and entrepreneurs from elsewhere to relocate to Connecticut. The state should give serious consideration to initiating a small-company recruiting campaign to complement its traditional program for recruiting large firms.
- Near-term availability of seed funding will be needed in order to more quickly begin generating a meaningful number of high-tech company startups and quality jobs. The existing state effort under the “New Opportunities Fund” is somewhat mid-term oriented because it will take some time to raise its seed capital funds from private sources. The state’s “Innovation Network” plan element for seed capital, due later this year, is expected to address the full short-to-long term spectrum of needs, but no details were available as of the completion of this report.
- The probability of success in creating new companies and quality jobs will be greatly enhanced by implementing a seven-to-ten-year, managed, patient process of seed and follow-on funding.
- Attracting, nurturing and managing seed level deals will require a sustained system with a broad spectrum of related “seed funding”<sup>1</sup> activities, from deals to forums to networks to angel investments, including the leveraging of federal and other country investments.
- It will be a challenge for a small state like Connecticut to differentiate itself as a proactive leader in technology-based economic development and thereby attract seed level deals and capital. To maximize Connecticut’s potential for success in this endeavor, it will be necessary to launch an aggressive, near-term effort to meet and/or overcome substantial competition from several other states and regions. This does appear feasible as long as the state acts quickly to secure a prominent position in the national and even international arena.

## 2. *Funding Constraints and Requirements*

- Geographic restrictions on company location make the raising of funds problematic, but not necessarily impossible.

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<sup>1</sup>The concept of “Seed Funding” proposed here is somewhat related to the “Fund of Funds” concept identified in Reference 1 (A Prospectus for Technology Transfer and Commercialization in Connecticut) and other venture capital works. It is meant to convey a broader approach that allows investing in not only a number of different funds – a “fund of funds,” – but also in a number of related programs.

- Technologies should be sourced without geographic restriction.
- Private matching of public funds is preferred but need not be mandatory. Fund managers should be given discretion to decide such on a case-by-case basis.
- It likely would be advantageous to keep submittal and documentation processes for funding simple. Simplicity in the investment process could be a significant competitive advantage for Connecticut.

### ***3. Resources and Capital Base Required***

- To assure sufficient seed capital in order to attain meaningful company and job creation goals in a timely manner, the state will have to provide the bulk of the funds, especially in the early years of the effort. However, it could impose a bias for early stage co-investing and still be competitive with other states.
- To be successful in catalyzing new business startups, differentiate itself in the entrepreneurial marketplace and gain a leadership position in the seed-funding arena, Connecticut would have to invest \$50 million to \$100 million over seven to ten years. It is reasonable to expect that, with later rounds of funding from other sources, such a program could generate up to 50 or more successful small companies and 2,000 to 4,000 jobs in that time frame.
- Facilitating the attraction of additional/follow-on funding is necessary and seems to be manageable. It is important that funds be made available for this purpose.

### ***4. Suggested Success Metrics***

- Company-creation-based, state-sponsored seed funding efforts should focus on a Total State Return (TSR) generated by such investments, made up of the total of the following metrics:
  - Number of companies and jobs directly or indirectly created in the state
  - Number of transactions and capital volume leveraged in early and later stage rounds
  - Estimated new taxes collected, wealth created and revenues due to sales inside and outside the state
  - Number of scientists, engineers and entrepreneurs attracted to and retained by the state – especially advanced degree specialists
  - Internal Rate of Return (IRR) consistent with public policy goals (public sector funds can still be successful in terms of achieving state policy goals even though they are turning out a lower IRR for the state than a pure privately managed fund) Private investors will require high level IRR on their investments.
  - 3-5 year survival rate of the companies created due to a program (including their successors through acquisitions)
  - Improved venture capital investment metrics for the state compared to national statistics (target to be in top 5 in 10 years)

Within this framework, Connecticut could seek a high TSR with a moderate IRR by diversifying the investment vehicles and conduits employed so as to contain downside risks and minimize loss potential.

- At a minimum, an independent yearly review of the program's performance should be conducted, along with five-year reviews conducted relative to strategic intent and goals, with the objective being to either sustain, redirect or terminate as warranted.<sup>2</sup>

### ***5. Potential Technology Target Areas***

- Although the core competencies identified in Reference 2 (Building Upon Connecticut's Core Competencies in the Knowledge Economy) provide an excellent initial guide for potential technology investment areas, it does not seem prudent, at this time, to limit investments to those areas alone.

### ***6. Candidate Organizations to Harbor/Manage Seed Funding***

- The Study Committee believes that due to its charter, experience, track record and positive stature in the venture capital community, CI should be considered for a significant role in Connecticut's seed funding program. It would be inconsistent and likely be viewed as irrational by the investment community for CI not to be given the opportunity to participate in a full spectrum of seed fund activities – some inside and some outside the organization – with independent, private funds bidding for blocks of funds to place with appropriate restrictions.<sup>3</sup> For this, either the CI Board would have to accept fiduciary responsibility or a new, independent Board would have to be created.

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<sup>2</sup>The Study Committee believes that it would also be useful to provide a yearly benchmark assessment of broader venture capital related metrics such as those identified by ICF in Appendix F on page 62, with special attention given those where Connecticut ranks low.

<sup>3</sup>Because CI is a state-controlled legal entity governed by a state-appointed Board of Directors, this conclusion also, de facto, addresses the legal and governance issues called out in the study's scope of work as presented in Appendix A.