

Implementing an Entrepreneurial Leave Program (ELP)

A White Paper for the DOE Technology Transfer Working Group

Pete Atherton, Sandia National Laboratories

Overview

There are many ways that the transfer of technology takes place inside DOE national laboratories including collaborative research, publication, and the licensing of intellectual property to companies. In some instances, the technology transfer process results in opportunities where employee expertise could help lead to the success of an entrepreneurial company. To that end, some labs have implemented an Entrepreneurial Leave Program (ELP) to provide entrepreneurship as a viable mechanism for maturing certain lab technologies into commercial products that benefit national security and prosperity. The breadth and depth of Entrepreneurial Leave Programs at the national labs differ. In general, the ELP allows lab employees to take a leave of absence or separation in order to start or join an entrepreneurial company. In some cases, the individual program may reduce some of the job security risks facing employees considering entrepreneurship by guaranteeing a job at the lab if returning within well-defined constraints. Other programs may require a separation with only partial certainty of returning to a job.

While the ELP has value in improving the success of technology transfer, its impact reaches beyond the initial interaction between lab employee and entrepreneurial company. The business community benefits through the capability to tap into the scientific resources of the lab while starting and growing entrepreneurial businesses. Perhaps even more impactful is the value the program offers as a way to help attract, retain and grow talented staff to the national laboratories. The ELP provides options and flexibility for long term employment at the labs, and enhances the image of the labs as an exciting place to work. If a lab is instrumental in launching a huge entrepreneurial success, there will be a major positive effect on the economy, on the lab's reputation and entrepreneurial culture, and correspondingly on the lab's ability to attract talent. Timing for an ELP at the national labs may be opportune, as suggested by recent New York Times articles titled "Venture Capitalists Return to Backing Science Start-Ups" and "Lux Capital Raises \$350 Million Fund to Back Science Start-Ups."

It should be noted that development, approval, implementation and operation of an ELP policy and supporting processes require significant effort. Consideration should be given to the benefits expected from this level of investment.

This document lays out a general procedure for implementing an Entrepreneurial Leave Program (ELP). It has been derived from the Entrepreneurial Separation to Transfer Technology (ESTT) program at Sandia National Laboratories with guidance from the DOE Technology Transfer Working Group (TTWG) ELP subcommittee. In analyzing the benefits and barriers to implementing entrepreneurial leave programs, the TTWG-ELP subcommittee identified the lack of a procedure as top barrier to implementing an ELP. This document is intended to be used to develop a policy to help implement Entrepreneurial Leave Programs, and to get management buy-in. The appendix includes written inputs from labs that responded to my request for information on their ELP, which contain a great deal of insightful information.

Participating in ELP

Under ELP, employees will change their employment status, with the approval of lab management, for the purpose of starting or helping expand a small technology-based business¹. Some labs allow an ELP where employees retain some employment benefits like medical insurance; other labs require a complete termination to better manage conflict of interest.

To participate in the program, employees must follow steps like those detailed in this procedure and obtain approvals based in part on the sufficiency of the benefits to the lab. If a license to use lab intellectual property is necessary to operate the proposed business, participation will also depend on successful negotiation of license terms.

Lab Employees Who Qualify for ELP

In order to qualify for ELP, lab employees must:

- Seek to obtain a license from the lab for patents or copyrights to start their own company
- Seek to join an existing small company that is a lab licensee in order to provide technical support
- Seek to start or expand a small technology-based company using technical expertise specifically developed at the lab that is unique and cannot be obtained outside of lab

Note: Some labs have additional requirements for when employees may apply for the ELP. These include a minimum number of years of service, a maximum management level, or limiting eligibility only to members of scientific staff.

Considerations

- Employees considering ELP must abide by requirements set forth in lab tech transfer and conflict of interest policies.
- When an employee leaves on ELP, their relationship with the lab is governed by lab policies.
- Employees taking ELP will have a change in employment status as governed by lab policies which may include up to termination from lab employment, loss of salary, loss of benefits and limits on access to lab employees and facilities.
- An employee on ELP who violates the provisions of the ELP agreement forfeits the right to return to employment at the lab.
- In evaluating ELP requests, consideration will be given not only to the impact on lab operations and organizations resulting from the potential depletion of technical talent, but also to the potential difficulty of re-absorption of the employee taking leave at the end of the entrepreneur's separation period.
- Intellectual property availability is subject to prior encumbrances. New encumbrances with other parties can be created at any time.
- While still on-roll awaiting departure on ELP, employees performing business preparation activities must do it on their own time (i.e. vacation, holidays, weekends, and other time other than normal working hours), not at the lab's expense. These activities include license negotiations, writing business plans, securing funding, and other activities associated with setting up their businesses.

¹ For ELP, a small business is defined as an independently owned and operated firm, certified, or certifiable, as a small business by the Federal Small Business Administration (SBA).

- The lab assumes no responsibility or liability for the success or failure of the entrepreneurial venture.
- Entrepreneurs who return to the lab from ELP must work as a full-time employee at the lab for a predetermined period of time before being considered for another entrepreneurial leave.

Summary of the ELP Procedure

1. Inquiry and Declaration of Desire to Pursue ELP:

In this phase, the lab employee considering entrepreneurship meets with the ELP Program Leader and is educated on the details of ELP including: benefits and consequences for the employee, the lab's obligations, conflict of interest and its mitigation, and the procedures for gaining approval to participate in the program. Consideration might be given to requiring a minimum time working at the lab before or in between ELP approvals.

This phase ends with a declaration of the employee's desire to formally pursue ELP.

2. Line Management Assessment of Employee's Desire to Pursue ELP:

In this phase, line management of the employee desiring to participate in the ELP determines if the employee's plans for ELP are consistent with lab's needs for the employee's services. Line management also determines the intellectual property (IP), if any, around which the employee desires to create his/her business.

This phase begins with a thorough briefing of line management about the ELP, management's roles and responsibilities in representing the lab's best interests and in assessing the impact of the request on line activities and on the line's ability to mitigate the employee's conflict of interest. Management then assesses the employee's desire to pursue ELP and either approves or disapproves the request.

If line management does not approve the employee's desire to pursue ELP, the process is terminated.

3. Conflict of Interest Mitigation:

In this phase, the employee, the employee's line management, and the lab's legal organization determine and agree on a conflict of interest risk mitigation plan.

If agreement cannot be reached by all parties, the ELP request is terminated. Otherwise, the mitigation plan is executed immediately.

4. ELP Request Package Preparation, Submission, and Management Approval:

In this phase, the employee prepares the ELP Request Package for lab management approval. The package includes a signed Acknowledgment of Intellectual Property Obligations form, an ELP request letter that includes a summary of the employee's business plan, the ELP Exit Agreement (unsigned at this time), the employee's Conflict of Interest (including the mitigation plan), and Outside Employment forms. The employee prepares the business plan and other documents on his/her own time. Once the request package is submitted, it is routed for approval through the employee's line and relevant legal, human resources, licensing, business and conflict of interest management per lab policy.

Lack of approval at any step in the approval chain terminates the request.

5. License Negotiation:

In this phase, if the employee is seeking to use lab IP in his/her entrepreneurial endeavor, the employee and a lab license executive negotiate terms of a license for the IP that the employee has identified in his/her ELP proposal.

The employee will leave the lab within an established timeframe after completing license negotiations.

6. Termination from the Lab:

In this phase the employee leaves the lab through the standard lab procedures.

7. Return to the Lab:

After a predetermined period of time before returning to the lab from entrepreneurial leave, the employee on entrepreneurial leave must inform the ELP office of his/her intentions to return to the lab or to give up the option to return to the lab within the framework of the ELP. This will allow lab management time to prepare.

The entrepreneur must also notify the ELP office if there is a change in the company's status (e.g., acquisition, out of business). The entrepreneur's return will be managed using the lab's specified process.

Optionally the entrepreneur could use an extension option per lab policy if allowed in the ELP. Lab policy will need to specify allowable deviations and related conditions for people to return to the lab or extend their leave. Lab policy will also need to satisfy conflict of interest requirements when returning to the lab, which may include consideration for large stock ownership.

8. Termination of ELP Participation:

If the entrepreneur violates program policy while on leave, they may forfeit the option to return under the ELP terms.

APPENDICES

TTWG ELP Subcommittee Members:

- Karen Ade, Department Of Energy
- Peter Atherton, Chair, Sandia National Laboratories
- Mostafa Beik, Argonne National Laboratory
- Connie Cleary, Brookhaven National Laboratory
- Tim Jones, Department Of Energy
- Daniel Krueger, KCP
- Genaro Montoya, Sandia National Laboratories
- Michael Paulus, Oak Ridge National Laboratory
- Elsie Quaiter-Randall, Lawrence Berkeley National Laboratory
- Michele Weigand, KCP

Barriers to Implementing an ELP from TTWG Subcommittee

The DOE Technology Transfer Working Group (TTWG) ELP subcommittee identified the following items as the top barriers to implementing an ELP:

- Lack of foundation of management support, policy, procedure, awareness and program management (Includes issues around COI, HR, Legal)
- Entrepreneur concerns over loss of income and benefits during leave, including pension continuity
- Manager concerns including loss of funding, hiring replacement talent, funding if person returns
- Entrepreneur concern about job availability on return
- Entrepreneur concerns over getting IP licenses and seed funding
- Entrepreneurs' lack of business expertise, experience and business management

Additional items raised by the team included:

- Limits on candidates for ELP like 3-year service, scientific staff only, cap on management level
- Other obligations a lab may place on a person who uses ELP
- Fairness of opportunity requires public knowledge but may hinder entrepreneurs' competitive advantage
- Part-time status to get company started
- Low pipeline of available technology
- Access to lab equipment by entrepreneurs after departure
- Equity participation by labs

Ideas for Improving an ELP from TTWG Subcommittee

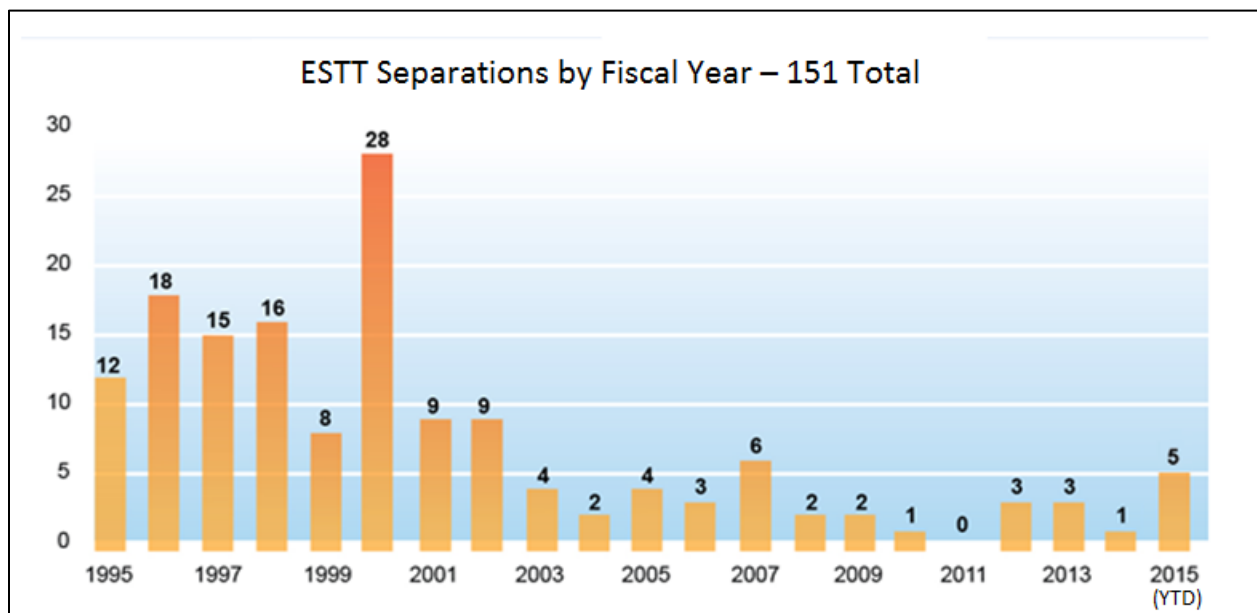
The DOE TTWG ELP subcommittee identified the following items as ideas to implement or improve an ELP:

- Procedure and policy for ELP that allows a lab employee to take a leave and return to a comparable job
- Solid management support for the ELP
- Entrepreneurial training offered to lab employees on how to start and run a business

- ELP that allows a lab employee to transition to part-time lab employment while starting a business to ease the financial strain
- ELP process that enables completion of an IP license before the employee leaves the lab
- Support services that are available to entrepreneurs after leaving the lab
- Seed money that is available from the lab or DOE to help start a company
- Access to lab equipment while developing a new product
- Facilities near a lab that allow scientists to move to and from an industrial site freely
- A lab consulting policy that enables a lab employee to consult on their own time to a startup company
- A lab policy that enables staff to take stock options in a startup company
- A lab policy that enables staff to start companies on their own time
- A lab policy that enables flexible lab employment hours to start a company
- A lab policy that enables ELP employees to retain benefits while on leave
- Recognition that when an employee returns from ELP they have gained valuable skills

Business Environment

While a good entrepreneurial leave program may result in more lab employees taking the opportunity to start or join entrepreneurial companies, the global, national and regional business environments may have greater impact on the number of lab people taking advantage of an ELP program. Below is a graph depicting people from Sandia National Laboratories who took advantage of the Entrepreneurial Separation to Transfer Technology (ESTT) program over the past 20 years. It is clear that the majority of ESTT separations took place during the dot-com bubble years.



Entrepreneurial Leave Programs for Researchers at Federal Laboratories
This section contains written contributions by people from the labs listed.

The following request was sent to TTWG voting members March 5, 2015.

TTWG voting members,

I am chairing the TTWG Entrepreneur Leave Program (ELP) subcommittee. We are working on a white paper that contains a generalized outline of an ELP process, and we would really like to add specific information about each lab's ELP. Please send a short write-up that may be openly distributed in the white paper that I can cut-and-paste into an appendix of the TTWG ELP white paper **by Friday March 20**. The following outline contains suggestions of what we are looking for, but please feel free to use your own judgment.

- Name of Lab
 - Name of person providing input and current position in the lab
- If your lab does not have an ELP program:
 - Did your lab have an ELP program that was stopped? If so, why?
 - Would you like to have a program at your lab? If so, what would help you implement one?
- If your lab does have an ELP program:
 - How long have you had the program and how many people have used it?
 - Who can participate? What are the requirements? What approvals are needed?
 - What is the employee status when they are on the program (e.g., terminated with no salary or benefits and an option to return in 2 years)?
 - How long can the employee take a leave? What are the reporting requirements?
 - Return to work (e.g., guaranteed, only if a position is open, rehire)
 - What have been some of the successes such as product commercialization, technology advancement or benefits to the lab such as support mission work or employee skill development?
 - What have been some of the challenges (i.e. risk mitigation, loss of skills, employee replacement)?
 - What would you recommend to other labs?
 - What changes can be made to improve the program's effectiveness?
 - Web site reference

If you have any questions please do email or call me.

Thank you!

Pete

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The following was cut-and-pasted from the replies.

Ames Laboratory

Debra L. Covey, Associate Laboratory Director

We have never had a formal ELP program and currently have no plans in the works to implement one.

NOTE: We do not have an ELP, but our Contractor and the Laboratory allow staff to create start-up companies while continuing to work for the Contractor. The individual(s) must have a Conflict of Interest Committee to manage potential conflict of interest between their responsibilities to our Contractor and to their start-up company. They are not allowed to work on their company's work during their work hours for the Contractor except by taking their accrued vacation, nor are they allowed to use Contractor owned equipment for their company's use unless they have an agreement with the Contractor to use/pay for such equipment time.

Brookhaven National Laboratory

Connie M. Cleary, Manager, Office of Technology Commercialization & Partnerships

We have not had a formal ELP program, although it is possible to do so through the COI policy & procedures. We are in the process of exploring a formal ELP program and it would be helpful to understand what other labs are doing.

Idaho National Laboratory

Mark A. Kaczor, Technology Deployment Director (Acting)/with edits by Steve McMaster

In the past five years, we have only had one employee who went on professional leave to pursue an entrepreneurial sabbatical. The employee did not return to the Laboratory. He and a partner began RFinity LLC, a "Next Generation Radio Devices & Solutions" company which was a start-up company based on a license to INL patent applications and patents and was initially invented by the employee. Another employee left the lab in 2012 to form a company for the purpose of competing for the license rights to INL software but ended up not taking a license and he did not return to the lab (so we haven't reported this as an entrepreneurial leave). Some years prior (~8-10 years ago) another PI left the lab to start NanoSteel (but we don't have records to indicate whether that was considered entrepreneurial leave). Two others retired from the Lab in 2012, one who then started work with Redwave, Inc., a start up formed around an INL technology, and another who then formed Advanced Ceramic Fibers, Inc., a company to whom DOE waived rights in pending patents initially filed but then waived by INL. Secondly, we do not have an "Entrepreneurial Leave Program", we have a "Professional Leave of Absence" policy controlled by HR and described in the "Benefits Handbook", copies of the relevant pages attached. We also have a "Guide for Employees Considering an INL Technology Based Startup", which Mark can provide if you'd like a copy.

Who can participate?

Regular full-time employees.

What are the requirements? What approvals are needed?

See below:

Applying for a Professional Leave

Requests for Professional Leave (whether full-time or part-time) must be submitted to the Benefits Office by the employee's immediate manager, and must include a completed Request for Professional Leave of Absence. Your application must include:

- The details of the proposed Professional Leave and the reasons for the request
- The relationship between DOE, the sponsoring organization, and the Laboratory
- The employee's history of outstanding contributions to Laboratory programs
- How the proposed activity will enhance the employee's reputation as an expert
- The potential benefit to be gained by the Laboratory
- The required management approvals
- Form 480.05, "INL Request for Approval of Outside Activities"
- Form 480.06, "INL Disclosure of Potential Conflict of Interest."

Requests for Professional Leave involving technology transfer activities must be based on the uniqueness and specialization of the specific technology to INL (refer to *Outside Employment and Conflict of Interest* in the Employee Handbook) as well as the above listed criteria. Employees who request Professional Leave for technology transfer activities or entrepreneurial efforts must prepare and submit a business plan for such activity. This plan must be approved by the Director of Technology Transfer and the cognizant technical office. All requests for Professional Leaves are processed through the Benefits Office and require approval of the Director of Human Resources and Diversity. The Benefits Office will provide the appropriate forms. (For additional options see *Professional Time-Off-Without-Pay Leave* later in this section.)

What is the employee status when they are on the program (e.g., terminated with no salary or benefits and an option to return in 2 years)?

See below:

Full-Time Leave. Employees who are approved for full-time Professional Leave must provide the Benefits Office with a written itemization of all benefits available to them through the sponsoring organization on that organization's letterhead. Certain Laboratory benefits may be maintained in conjunction with the leave. However, benefits provided by the sponsoring organization will not be duplicated by the Laboratory. Participation in the INL Employee

Investment Plan will be suspended and contributions will not be accepted. Additionally, employees on Professional Leave will not be eligible for any travel and relocation benefits.

How long can the employee take a leave? What are the reporting requirements?

See below:

Professional Leave of Absence will be granted initially for a period not to exceed 1 year. Two 1-year extensions may be approved for a maximum leave period of 3 years. With the concurrence of management and program sponsors, employees may take Professional Leave on a part-time basis.

Return to work (e.g., guaranteed, only if a position is open, rehire)

See below:

Reinstatement of Active Employment Status

Employees may request the reinstatement of active employment (or full-time employment in the case of an employee on part-time leave) through the approving former manager and their HR Representative. Reinstatement to active full-time employment is not guaranteed, and employees on Professional Leave are not eligible for benefits under workforce restructuring. However, every effort will be made to return the employee to a comparable position, if possible.

What have been some of the successes such as product commercialization, technology advancement or benefits to the lab such as support mission work or employee skill development?

Nanosteel has created successful products based on INL patents, RFinity has not, Advanced Ceramic Fibers may or may not create successful products, and there was a company in the 90s called Sciencetech that is now owned by Curtis-Wright and has lots of successful products.

What have been some of the challenges (i.e. risk mitigation, loss of skills, employee replacement)?

Those are the challenges. Unlike University start-ups you cannot put people in the company, like graduate students, that can enable the successful transfer of the technology, without losing valuable talent and programs at the lab. This is the biggest challenge.

What would you recommend to other labs?

Figure out, as we are doing now with a new technology (WSComm), how to structure the start-up opportunity in a way that fulfills the objective of "A Rising Tide lifts all Boats", meaning that the start-up will benefit the lab program by performing aspects of product development that the lab cannot do because it would compete with the private sector (i.e. manufacturing) and vice versa, meaning the lab licenses IP into the company.

What changes can be made to improve the program's effectiveness?

Revise the Intellectual Property (IP) rules to allow an employee on Professional Leave of Absence to own their own inventions created after leaving the lab.

The problem currently is one of having one's cake and eating it too, meaning that the employees want to retain benefits but still own their IP, they want it both ways, the security of the lab without the risk of an entrepreneur. Perhaps the best solution is no ELP Policy at all but a clean break from the lab and then licensing of the lab's IP into the start-up where the branding opportunities (this product was based on technology developed at INL) remain, along with the legal license agreement, however, the "purely personal" and "personnel" policies do not attach to the relationship.

Lawrence Livermore National Laboratory

Roger Werne

At present we have an Entrepreneurial Separation (ES) Program where employees terminate from the Lab. Its details are covered in the first attachment. We choose an ES because it did not have the problems of IP entanglement that occur when employees are on Leave. We've had this program for about five years and eight employees representing five companies have taken advantage of it according to my records. All of the companies are still viable and one employee has returned. The rest of the answers to your questions below are in the attachment.

To make Entrepreneurship even more attractive, a group of us are proposing an Entrepreneurial Leave (EL) Program which has yet to be accepted but we are hopeful. EL would pay an employee's medical benefits if he/she can demonstrate a need. The IP entanglements are handled by a review that allows the company to appeal for ownership of the IP which will not be "unreasonably withheld".

	Entrepreneurial Separation(ES) - LLNL Current Plan
Process	Individual applies fro ES and Laboratory management reviews and approves as appropriate. ES is not for every employee.
Duration	Two years with one additional year if requested and approved.
Sick Leave & vacation	Sick Leave balance upon taking ES is forfeited and vacation is paid out.
Break in Service?	Yes, upon return from ES, the rehire date is the employees' new start date This rehire date will affect their benefits incase of a layoff.
Medical Benefits	Employee eligible for Lab medical Insurance under COBRA for 18 months.
Retirement Program	LLNL has two retirement plans, one for employees who were under the University of California called TCP1 and the other, TCP2, for employees hired since LLNS became the LLNL contractor. ES participants all return to the TCP2 plan.
Return from EL	Employee can apply for any internal posting.
IP while on EL or EES	LLNS has no right to IP generated by the employee while on ES provided it is independent of previous LLNS work.
Conflict of Interest	Potential for COI must be managed from first declaration of interest in ES but once the individual is on ES, required management attention should be minimal.

National Energy Technology Laboratory

Jessica Sosenko, Technology Transfer Program Manager

Currently, NETL does not have an ELP. However, we are looking into creating one.

National Renewable Energy Lab

Anne Miller, Assistant Director, Technology Transfer Office

The NREL sabbatical policy allows for one year of sabbatical absence to pursue outside activities. NREL has no formal entrepreneurial leave program but is exploring options for establishing such a program in

the future. In the meantime, NREL supports the Energy Fellows Institute, a program run by the Colorado Cleantech Industry Association that educates experienced technology entrepreneurs and executives about advanced energy and promotes new ventures that create jobs in the energy sector. The Technology Transfer Office also fosters and supports partnerships between outside entrepreneurs and lab researchers. This can allow a lab researcher to effectively support a start-up without leaving the laboratory.

In terms of what would help us to implement ELP, we would need to identify staff interested in doing this and deal with conflict of interest issues around licensing IP to employees and approvals. [DOE approval is required for exclusive licenses to someone who has worked at the Lab in the prior two years.]

We would, of course, be very interested in the practices and experiences of the other labs with regard to ELP and would find a white paper very helpful.

National Security Campus

Kristin Murray, Technology Transfer Program Manager

The National Security Campus (NSC) does not have and has not had an Entrepreneurial Leadership Program (ELP). However, the NSC is considering the implementation of an ELP as there are numerous benefits to such a program. One benefit would be an opportunity to improve the technology transfer potential for the current NSC intellectual property portfolio by allowing the inventors the option to step away from their present roles and focus more singularly on their inventions. Furthermore, as Technology Transfer is part of the NSC mission, improvements in that area should increase customer satisfaction. Moreover, in addition to increasing NSC licensing revenue that can be used to mature novel technologies and pursue new licensing partnerships, there are benefits to other stakeholders, including the taxpayer, as the technology transfer efforts spur US economic investment.

Conversely, there are several barriers that would need to be removed prior to being able to employ a successful program. First and foremost, a program would need to be developed and approved for implementation. Example policies, procedures, legal documentation, selection criteria, and information sheets for managers and interested parties from other sites to be used as a starting point for an NSC policy would be beneficial and could expedite the process.

In general, the NSC has a work force that is fairly risk adverse. While a culture of and focus on entrepreneurship is developing in the Kansas City area, the current assessment is that the contingent of NSC employees willing to risk professional and financial stability to participate in an ELP is still small. However, a strategic program to develop intelligent risk taking among current employees and an effort to hire new employees who are more risk tolerant or risk inclined could overcome the current culture barrier.

Additionally, the existing NSC pipeline of license ready technology is very limited, which greatly reduces the opportunities for employees who would want to participate in an ELP in the short term. The NSC would need time and a focused effort to build its portfolio of license ready technology which potential entrepreneurs could pursue commercially. Nevertheless, as the NSC renews its focus on intellectual property development and technology transfer, this should not be a barrier for future participants developing technology that they desire to translate to commercial profitability through an ELP.

Another barrier to a successful ELP is the inadequate commercial business expertise of NSC employees. Even though the NSC does have some employees with practical and more with theoretical business knowledge, many employees have limited, if any, actual commercial business experience. The majority of interested associates would require business savvy partners and/or additional training to be successful in an entrepreneurial endeavor. Although, there are numerous resources in Kansas City to facilitate the acquisition of the necessary entrepreneurial skills to which participants can be directed.

Finally, in order to implement an ELP, the NSC would need assistance and time to build management support for such a program. It would be difficult to encourage employees to participate in an ELP without full backing from NSC management, and an endeavor to garner management support of the program would be necessary.

Oak Ridge National Laboratory

Mike Paulus, Director, Technology Transfer

If your lab does have an ELP program:

How long have you had the program and how many people have used it?

More than 20 years

Typically 1-2 people per year

Who can participate? What are the requirements? What approvals are needed?

Minimum Selection Criteria:

- Leave must be acceptable to the employee's management/Division Director and, if appropriate, the Program Manager.
- Leave must not jeopardize ORNL's commitments to honor any prior agreement with other licensees, including the ability to provide technical support as determined by the organization manager and TTED.
- Issues of "Fairness of Opportunity" must be properly addressed to the satisfaction of TTED.
- Leave must not create a conflict of interest for the employee or ORNL.

Individual Evaluation Criteria:

- Employee must demonstrate the potential for successful deployment of DOE technology:
- If licensing is an appropriate result of the Leave, the commitment to license DOE technology within specified time period after granting leave.
- Use of DOE knowledge (product or process with no specific intellectual property rights) that is core to the new business.
- Commitment to start a regional-based business.
- Employee is creating and/or supporting a company or a new enterprise in an existing firm.
- If creating a new company, the employee must provide a summary business plan, commercialization strategy, or individual performance plan and milestones that illustrate the use of the DOE technology.

What is the employee status when they are on the program (e.g., terminated with no salary or benefits and an option to return in 2 years)?

Terminated with no salary or benefits. Returning employees retain service time.

How long can the employee take a leave? What are the reporting requirements?

Initial leave is granted for a minimum of six months and a maximum of 12 months. Entrepreneurial leave can be extended upon the written request of the employee. The total of initial leave plus extensions cannot exceed 36 months. There are no reporting requirements during the leave of absence.

Return to work (e.g., guaranteed, only if a position is open, rehire)

- When an employee presents him or herself for return to work from a leave of absence, subject to the current business conditions of the company at that time, the employee is returned to his or her former position, or its equivalent, with equivalent pay, benefits, and other terms and conditions of employment to which the employee would have been eligible before the leave of absence.
- If current business conditions are such that there is no position available upon presentation for return to work, then the employee will be terminated with normal severance pay. Company service will end as of the last day worked before the leave began.
- Any employee who fails to return to work at the end of the leave of absence and does not show acceptable cause for the continued absence will be considered as having resigned voluntarily. Company service will end as of the last day worked before the leave began.

Additional Program:

ORNL also offers an outside activity program that enables full time employees to engage with entrepreneurial companies working to commercialize ORNL technologies with appropriate conflict of interest mitigation. Work outside of the laboratory is typically limited to ten hours per week. This outside activity program provides a useful stepping stone between full time employment and entrepreneurial leave.

What have been some of the successes such as product commercialization, technology advancement or benefits to the lab such as support mission work or employee skill development?

- ORNL employee-led company introduced three generations of products based on ORNL technology and was acquired by a multi-national company. The founders both returned to ORNL.
- ORNL employee formed a technology-based company while on entrepreneurial leave and elected to remain with the company as CEO.
- ORNL employee-led company introduced a new line of products based on ORNL technology. The CEO returned to ORNL after the company closed.
- Five ORNL staff members are currently on leave.

What have been some of the challenges (i.e. risk mitigation, loss of skills, employee replacement)?

- Until recently, the ORNL entrepreneurial program has been relatively underutilized. This year, five employees have been granted leave, the most in at least 10 years.
- The ORNL program offers only a limited safety net. Benefits are limited to COBRA and there is no stipend, but employees do retain service time toward retirement and vacation. Return to work is not guaranteed, although rarely if ever denied.

What would you recommend to other labs?

We believe the ORNL implementation of entrepreneurial leave provides a viable return path to the laboratory and an appropriate safety net for entrepreneurial staff members. Full separation is important because it enables the entrepreneur to focus fully on his/her business venture, removes conflicts of interest, and eliminates laboratory claims on new intellectual property.

What changes can be made to improve the program's effectiveness?

One frequent challenge is that returning entrepreneurs have frequently lost their funding during their absence. The program could be improved by creating a funding pool to provide short-term support while the employee rebuilds his/her funding portfolio. Providing continuity of medical insurance benefits may also be worth exploring.

Pacific Northwest National Laboratory

Gary Spanner, Manager, Economic Development

PNNL operated an Entrepreneurial Leave of Absence Program from 1995 to 2002. The program ended because the risks and effort grew to outweigh the rewards of it. Also, demand dropped off to an extremely low level. Bear in mind that the program was started during a time of drastic cuts in DOE funding and commercial nuclear construction in the local area; by 2002 the local economy was again doing well.

PNNL is actively developing a new entrepreneurial program with a target start date of FY2016. Funding to pay for administration and health benefits would be very helpful. As currently envisioned, the PNNL entrepreneurial leave program will include a requirement that leaves be based on licensed PNNL technologies, rigorous vetting prior to acceptance into the program, full- or part-time leave, continuation of health benefits, mandatory training for participants, assignment of outside mentors to participants, and required milestones to continue participation. Beyond leave of absence for PNNL staff, the program will also allow external entrepreneurs to license technologies and then receive much of the same support available to internal participants. Further, non-participating PNNL staff will be allowed to attend the entrepreneurial training offered to participants.

Sandia National Laboratories

Genaro Montoya, manages the Entrepreneurial Separation to Transfer Technology (ESTT) and New Mexico Small Business Assistance programs

For 20 years, Sandia National Laboratories researchers have been able to leave the labs to start or join small companies, knowing they can return, through the Entrepreneurial Separation to Transfer Technology (ESTT) program. ESTT encourages researchers to take technology out of the labs and into the private sector by guaranteeing their jobs back if they return within two years. They can request a third-year extension.

Recently, Sandia has conducted a survey to gauge the economic impact of the ESTT program. The survey shows 145 Sandia researchers have left on ESTT, 62 to start a business and 83 to expand one. Forty-one, or 28 percent, returned to the labs while 98 researchers left for good. Of the 145 who left on ESTT, 27 of the companies they joined licensed a Sandia technology. Six researchers are currently on ESTT.

Their work has made a difference: creating jobs, bringing Sandia expertise into the private sector and boosting economic development. Thirty-three of the 99 companies involved in ESTT since it was launched in 1994 responded to the survey. Respondents said 379 jobs were created by their companies through the program since it began, and that in 2012 they employed 1,550 people at an average annual salary of \$80,000. Their 2012 sales revenue was \$212 million. From 2008 through 2012, the businesses invested \$40 million in equipment and \$277 million in goods and services. Two-thirds of them had

commercialized a technology as a result of ESTT. Of the 99 companies impacted by the program since 1994, 49 were startups and 50 were expansions.

SLAC National Accelerator Laboratory

Janet Tulk, Contract and Partnerships Manager

SLAC does not have an Entrepreneurial Leave Program.

Thomas Jefferson National Accelerator Facility M&O - Jefferson Science Associates, LLC

Joseph Scarcello, Chief Financial Officer and Business Operations Manager

How long have you had the program and how many people have used it?

Since February 3, 2012, a little over three years. Two employees have used it.

Who can participate?

An employee may be granted Entrepreneurial Leave of Absence to accelerate technology start up based on DOE developed technologies

What are the requirements?

Selection Criteria:

- Leave must be acceptable to the employee's management/division director.
- Leave must not jeopardize JSA's commitments to honor any prior agreement with other licensees, including the ability to provide technical support as determined by the division director.
- Issues of "Fairness of Opportunity" must be properly addressed to the satisfaction of the Technology Transfer Committee and the Chief Financial Officer and Business Operations Manager.
- Leave must not create a conflict of interest for the employee or JSA.

Evaluation Criteria:

- Employee must demonstrate the potential for successful deployment of DOE technology:
- If licensing is an appropriate result of the Leave, the commitment to license DOE technology within specified time period after granting leave.
- Use of DOE knowledge (product or process with no specific intellectual property rights) that is core to the new business.
- Commitment to start a regional-based business.
- Employee is creating and/or supporting a company or a new enterprise in an existing firm.
- If creating a new company, the employee must provide a summary business plan, commercialization strategy, or individual performance plan and milestones that illustrate the use of the DOE technology

What approvals are needed?

The Chief Financial Officer and Business Operations Manager is responsible for counseling the employee on these policies and rules and either denying or approving the Entrepreneurial Leave of Absence

What is the employee status when they are on the program (e.g., terminated with no salary or benefits and an option to return in 2 years)?

All entrepreneurial leaves of absence shall be without pay. However, employees who have accrued vacation time may utilize such pay in lieu of no pay (administered in accordance with current pay schedules – not to exceed 40 hours per week.)

The Laboratory will continue payment of the following employer sponsored benefits for employees during their entrepreneurial leave period:

- Life Insurance Contributions
- Long Term Disability Contributions
- The Employer portion of Medical Benefits

How long can the employee take a leave?

Initial leave is granted for a minimum of three (3) months and a maximum of twelve (12) months. Entrepreneurial leave can be extended upon the written request of the employee. The total of initial leave plus extensions cannot exceed 36 months

What are the reporting requirements?

- Employee prepares and submits the following to the Chief Financial Officer and Business Operations Manager:
- Approval letter from line management or divisional director to include period of time authorized.
- Justification for Leave request to include:
 - Description of the DOE or JSA intellectual property involved;
 - If applicable, a written business plan, with description of the planned market (this market should not consist primarily of sales to DOE or JSA);
 - Discussion of anticipated financing;
 - Schedule of timeline with key milestones to be accomplished during participation of the leave;
 - Entrepreneurial Leave of Absence Request Form, following the policy above.
 - Approved Outside Business Activity Request Form

Return to work (e.g., guaranteed, only if a position is open, rehire):

Employees are expected to remain on leave for the duration of their leave period. Should the leave be terminated in advance of the leave period, it will be at management discretion based on operational need to accept the employee back to work earlier than scheduled.

What have been some of the successes such as product commercialization, technology advancement or benefits to the lab such as support mission work or employee skill development?

Employee spin off company resulting in commercialization of Boron Nitride Nanotube production.

What have been some of the challenges (i.e. risk mitigation, loss of skills, employee replacement)?

Work with your legal and human resources to ensure that conflicts of interest and intellectual property matters are properly addressed.

What would you recommend to other labs?

1) Work with your Contracting Officer and/ field office to share your entrepreneurial leave policy and to get the authorization for the leave added to your Contract / Appendix A as appropriate. 2) We have

found the Entrepreneurial Leave Program to be an effective tool. For those Labs who have not yet developed a program, they should look at it further to consider adding it to their portfolio of technology transfer tools.

What changes can be made to improve the program's effectiveness?

So, far, the Program is working effectively and no changes are foreseen at this time.

Web site reference

NA