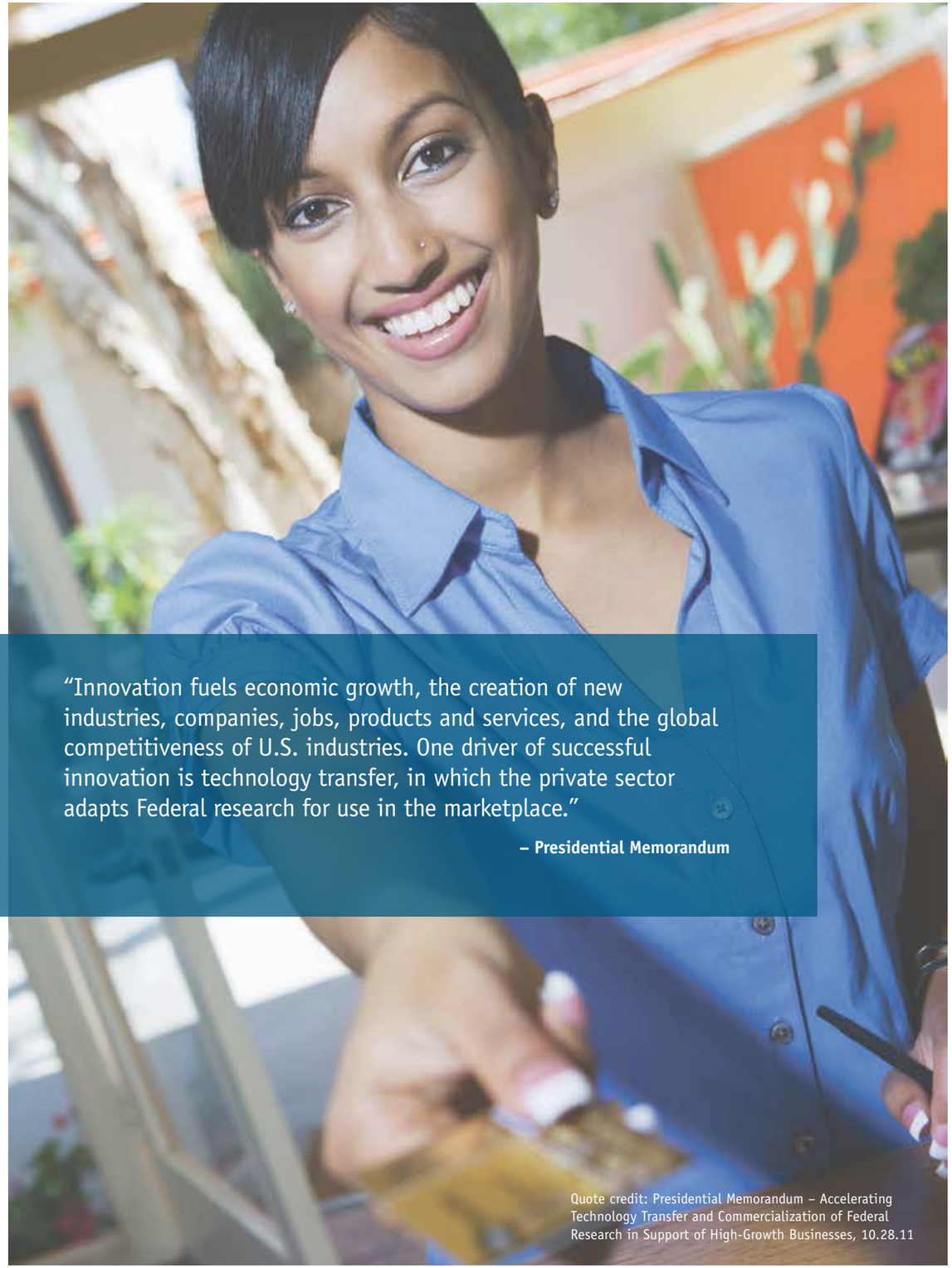
2012 Annual Report
to the President and Congress

FLC
Federal Laboratory Consortium for Technology Transfer

Advancing Federal Research and Technology



"Innovation fuels economic growth, the creation of new industries, companies, jobs, products and services, and the global competitiveness of U.S. industries. One driver of successful innovation is technology transfer, in which the private sector adapts Federal research for use in the marketplace."

– Presidential Memorandum

Quote credit: Presidential Memorandum – Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses, 10.28.11

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A Letter From the **FLC Chair**

The theme for our Annual Report to Congress for FY2012 is the root of the FLC mission: Technology transfer spurs economic growth.

Technology transfer (T2) continues to play a critical role in creating jobs, encouraging economic development, and increasing America's global competitiveness. The role of T2 in economic development has received greater attention this past year by both academic researchers and our government in the laws and policies it has promulgated.

We have seen a marked increase in the number of American businesses embracing that they can leverage federal technology investments to improve their products, services, and bottom lines. FLC members are charged with facilitating the technology transfer process and, now more than ever, the success of those efforts is measured on how well they do so. The FLC's job, as mandated by Congress, is to assist with T2 and establish best practices so T2 can more efficiently fuel commercialization.

While many organizations are dedicated to supporting technology transfer, the FLC is the only one that brings all of the federal labs and agencies together into a cohesive national network that is dedicated to supporting U.S. economic development. In addition to their day-to-day efforts toward this goal, the FLC's members have broad experience bases and are pleased to share their acquired knowledge with potential partners and newcomers to the field. Their hard work and dedication to improve the overall effectiveness of federal technology transfer can be seen in the results. Although faced with tighter training, travel and outreach budgets, their dedication remains constant, and they have found creative and innovative ways of conducting activities that promote and pursue technology transfer through web-based courses and educational webinars.

As you will read in this report, the FLC rose to the occasion just as our members did. We responded to members' changing needs with new initiatives and tools to supplement our proven services. Specifically, we spearheaded new methods of facilitating access to the labs and their technologies, which are such an essential part of creating new and better products and processes—or even giving rise to entirely new industries—thereby ensuring an even better return on the taxpayers' investment.

Our goals this year were to demonstrate that technology transfer is good for business and to facilitate making the process consistent and easily accessible across the complex network of federal labs.

MOJDEH BAHAR

Our new Available Technologies search engine tool is a significant development for the technology transfer and business communities. The tool makes available federal technologies from across the network of federal labs, allowing a searcher to quickly and easily find the best labs and technologies for their needs.

We continued to promote the economic advantages of T2 by recognizing commercial successes, reaching out to potential partners and like-minded organizations, educating our members and potential partners about T2 and new procedures, and fostering the network that strengthens technology transfer. With travel significantly restricted, we increased our offering of online and virtual methods to train and interact with the community. We also developed new ways of promoting technology transfer through our communication and outreach efforts, including taking advantage of social media. Another way the FLC has promoted technology transfer—especially important in the current environment—is through our prestigious awards program, which recognizes those dedicated members who see an idea or invention through to commercialization.

The FLC's initiatives are helping technology transfer professionals meet the President's charge to commercialize even more federally developed technologies. We serve a critical role in supporting these efforts, raising the profile of federal technology transfer and maintaining U.S. economic growth and competitiveness.

On behalf of the members of the Federal Laboratory Consortium for Technology Transfer, I am pleased to present, in accordance with 15 U.S.C. 3710, the FLC Annual Report for Fiscal Year 2012 (FY12) to the President, Congress, and appropriate agencies.

Respectfully,

Mojdeh Bahar
FLC Chair

Technology Transfer Today

ADVANCING FEDERAL RESEARCH AND TECHNOLOGY

The statistics are clear that technology transfer (T2) propels U.S. businesses to be more competitive in the global marketplace and spurs domestic economic growth. Recognizing this, Congress mandated that, whenever possible, the R&D conducted in federal labs be transferred to the private sector. This process—known as technology transfer—benefits U.S. industry in many ways. T2 reduces companies' R&D costs and product development time and costs by providing resources, material, or facilities that may not be available in the private sector; partnering of personnel and corporate know-how; and much more. Most importantly, in the age of rapid innovation and global competition, T2 decreases new product time to market.

Through commercialized technologies, innovative processes, and unique expertise and resources that are good for business, federal technology transfer benefits the economy. With such a vast and diverse mission, and with issues of protecting intellectual property, the benefits of technology transfer can be hard to measure; however, over the past few years there has been a concerted effort to do so. Two recent studies have begun to show just how. While they are not indicative of the entire federal technology transfer landscape, they show the effect that technology transfer can have on the economy.

The Indiana Study (October 2010)

The Indiana Business Research Center, a part of Indiana University's Kelley School of Business, analyzed agreements at just one federal agency, the Department of the Navy. The study of just over 100 technology transfer agreements with the private sector in Navy labs revealed that:

- The agreements generated more than half a billion dollars in "economy impact."
- On average, the technology transfer agreements used supported 26 jobs per agreement.
- The average compensation for these jobs is more than $20,000 higher than the national average.

The Montana Study (August 2012)

The University of Montana, Bureau of Business and Economic Research, evaluated Department of Defense (DOD) partnerships brokered by TechLink, the primary DOD partnership intermediary, over an 11-year period. This study showed that:

- The total economy-wide impact was nearly $3 billion in output, combining direct, indirect, and induced impact.
- Just over $1.5 billion in value was added.
- This T2 activity generated $331 million in tax revenues.
- Nearly 18,000 jobs were created, with an average compensation of $59,000 per year.

With at least 18 federal agencies and departments conducting technology transfer, the magnitude of a robust T2 program and its impact can be staggering. While both studies include disclaimers stating that these results may not be universal to the entire realm of federal technology transfer, we strongly believe that these results would be similar at other agencies. The studies certainly show the capacity that federal technology transfer can—and does—have to benefit the U.S. economy and job creation.

We fully expect to see more demonstrations and proof of that fact in coming years. As agencies respond to the Presidential Memorandum with enhanced metrics, we look forward to seeing the positive results. It is our hope that this area will see future study, and the FLC will be in a unique position to support any efforts to conduct comprehensive analysis on federal technology transfer's total economic impact.

590
Technology Transfer
agreements generated

- $ **2.9 BILLION** in **SALES ECONOMY-WIDE**
- \+ Plus **1.5 BILLION** in **VALUE ADDED**
- And nearly **18,000 JOBS**[1]

TECHNOLOGY TRANSFER
agreements government-wide in FY11

- **3,398 INVENTION LICENSES**
- **7,798** active Cooperative Research and Development Agreements (**CRADAS**)
- **20,599** other collaborative **R&D RELATIONSHIPS**[2]

[1]National Economic Impacts from TechLink-Brokered Partnerships between the Department of Defense and U.S. Industry, 2000-2011, University of Montana Bureau of Business and Economic Research, August 2012.

[2]Statistics obtained from the National Institute of Standards and Technology for the 11 federal agencies with significant federal laboratory operations.

"As a co-founder and co-chair of the Congressional Technology Transfer Caucus, I believe that technology transfer can provide great benefits to our nation's economic competitiveness and job creation."

– Rep. Ben Ray Lujan (D-NM)

2012—A BIG YEAR FOR TECHNOLOGY TRANSFER

Fiscal year 2012 (FY12) brought many new developments to the world of federal technology transfer and the FLC, and technology transfer reached a new level of prominence in the national agenda. Arguably, FY12 was the most significant year since the original technology transfer laws were passed in the 1980s. In FY11, the Science and Technology Policy Institute (STPI) released a groundbreaking study of the T2 landscape. The findings were useful to both the federal labs and the FLC regarding how to best implement strategic change in FY12.

Specifically, two major developments affected the landscape to start FY12:

- The most significant change to U.S. patent law since 1836—the Leahy-Smith America Invents Act (AIA)—was enacted just weeks before the start of FY12. The AIA converted our patenting process to "first-inventor-to file," a major change for the scientific and T2 communities.
- On October 28, 2011, President Obama released a Presidential Memorandum entitled "Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses." The President charged the federal labs with making technology transfer easier and faster, and increased the metrics for measuring success.

While the previously mentioned Indiana and Montana studies demonstrated that federal technology transfer can have substantial economic impacts, FY12 also brought about fiscal constraints and budget cuts not seen in many years. With the President's challenge to "do more with less," it became more demanding and necessary to conduct technology transfer.

THE FLC ROSE TO THE CHALLENGE TO HELP THE FEDERAL LABORATORY COMMUNITY AND DEVELOPED NEW TOOLS LABS CAN USE TO ACCELERATE COMMERCIALIZATION AS CHARGED. WE ACCOMPLISHED THE FOLLOWING:

1. Created new education and training materials concerning the AIA.
2. Forged a closer relationship with the U.S. Patent and Trademark Office (USPTO).
3. Enhanced and increased our outreach efforts, including social media presence.
4. Developed and deployed the Available Technologies search engine.
5. Increased the availability of online tools and resources in response to fiscal constraints.

FLC Activities and Accomplishments

Facilitating Access to Labs and Technologies

The FLC's mission is to promote and facilitate the rapid movement of federal laboratory research results and technologies into the mainstream of the U.S. economy. Part of that mission is the mandate to serve as a clearinghouse for federal technologies, and the FLC actively pursues new and more effective ways to fulfill this mandate. The FLC provides two major resources to facilitate this access: the Available Technologies tool and the Technology Locator service. These two complementary services offer "one-stop shopping" for federal laboratory technologies and provide a variety of options for businesses, large and small, to find the best way to work with the federal labs.

The FLC also maintains a searchable, online database of federal laboratory profiles, which contains capabilities, facilities, background, and contacts for more than 300 laboratories and research centers, as well as the technology transfer mechanisms they use. These profiles allow people to learn more about the labs and their capabilities by browsing or by searching for specific features, as well as helping lab personnel network with their counterparts at other federal labs.

AVAILABLE TECHNOLOGIES

In a "do more with less" mentality, we leveraged existing Google search technology to develop and deploy a powerful search engine that aggregates listings throughout the federal laboratory system, thereby reducing the time, effort, and guesswork in finding opportunities to meet potential partners' needs. Instead of sifting through the websites and records of each lab, users can now search for technologies available for commercialization using standard Boolean terms. Our search engine uses Google technology to scan more than 20,000 available federal lab technologies by crawling the websites of 13 agencies, covering about 225 labs.

Clicking on a result takes the searcher to that lab or agency's listing. Searches return a powerful set of data, including a description of the invention, its applications and benefits, the current development and patent status, the name of the inventor, and the contact information for a technology transfer professional at the lab who can facilitate the process. Once companies (or other potential partners) find the technology they need, they work with the laboratory or agency on licensing and other processes. In the relatively short time since its launch, the Available Technologies page has been visited nearly 10,000 times.

TECHNOLOGY LOCATOR

The Technology Locator service directly promotes and facilitates the technology transfer process through personal, one-on-one assistance. Technology Locator personnel receive and review technology-related requests to solve a technical problem, improve a product or process, develop a technology, license an available government patent, use a test facility, or in some manner collaborate with a government lab. Then, using the FLC's network of

Laboratory Representatives and in-depth knowledge of the federal laboratory system, the Technology Locator staff put technology seekers in contact with federal laboratories that possess expertise and capability in the specific technology area sought. Technology Locator staff members match potential partners from industry, nonprofits, state and local governments, academia, and even other federal agencies and laboratories with appropriate technology resources within the federal laboratory system. This service helps potential collaborators take advantage of the vast reservoir of technology and expertise located in federal laboratories and, as such, speed product commercialization.

Harlyn Thompson, R.N., of Harlyn Medical, LLC (HM) (www.harlynmedical.com), introduced the Lumbar Vicinity Inflatable Support (LViS) device at the FLC meeting in Portland, Ore. The FLC Technology Locator has been working with Ms. Thompson to introduce the device to military medical personnel.

"We are collaborating with a military surgeon in Afghanistan who is testing LViS for use under wounded soldiers during long medical air flight evacuations. We are also working with VA, military, and civilian hospitals across the country. We at HM are nurses finding solutions…and our products are proudly made in the USA."

– Harlyn Thompson, R.N.

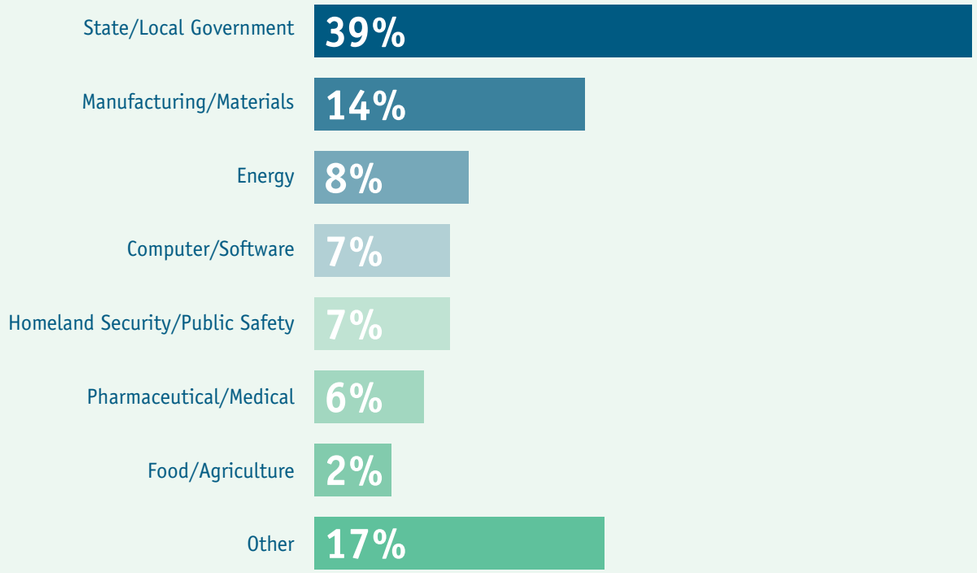
"The US Federal Laboratory Consortium for Technology Transfer (FLC)… provides a sort of Match.com for drug makers and others looking to partner with agencies on government-funded technologies."

– Donna Young, Scrip Intelligence Washington Editor

FY12 TECHNOLOGY LOCATOR ACTIVITIES

In FY12, the Technology Locator service received more than 200 requests for assistance. There are multiple success stories from 2012 that are directly attributable to our services. These success stories generate jobs and spur economic development.

FY12 TECHNOLOGY LOCATOR REQUESTS BY LABOR CATEGORY



*Based on requests received from 10/1/2011 through 9/30/2012 (FY 2012)

FUTURE OUTLOOK

In FY13, the FLC is expanding the Available Technologies search tool to enhance its capability and utility to the end user with functionality such as advanced searching and the ability to save multiple search queries. To increase the tool's search capabilities, the FLC is actively seeking additional agency participation. The FLC is also in the process of integrating this search engine more fully with the federal laboratory profiles, allowing Laboratory Representatives to update their lab profiles as needed, and adding the capability to limit results by such important delineators as region and location. This effort will serve as the basis for a business resource center that will evolve into a comprehensive "one-stop shop" for all potential partners' needs.

Education and Training

One of the FLC's primary mandates is to provide education and training to federal technology transfer professionals as well as federal scientists and other researchers. The FLC's comprehensive and highly regarded education and training program is implemented through multiple channels: training events and courses, multimedia training materials, online resources, and printed publications. Technology transfer professionals must also stay abreast of legislative changes, best practices and current trends, such as social media, to market available technologies and facilitate technology transfer.

In FY12, the FLC prioritized educating members about the AIA through both new and existing training initiatives. One crucial element of these educational efforts involved developing a close relationship with U.S. Patent and Trademark Office (USPTO) staff members who are intimately involved with the implementation of AIA policies and procedures. Their expertise provided the FLC community with a depth of understanding that is essential both to "hit the ground running" with first-to-file and disseminating that knowledge within the labs.

TRAINING EVENTS AND TRAINING COURSES

At the FLC national meeting in Pittsburgh in April 2012, we held a full-day training event consisting of three levels of training for technology transfer professionals, including several tiers of training concerning the AIA. The courses and workshops at the 2012 national meeting were attended by approximately 160 participants. All of the courses and workshops met the requirements of the International Association for Continuing Education and Training (IACET), the internationally recognized organization for continuing education and training standards. The tiers of training included Fundamentals, Intermediate, and Advanced.

The national meeting training day was highlighted by a keynote speaker from the USPTO, Deputy Chief of Staff Azam Khan, who gave trainees a presentation entitled "From Concept to Commercialization: The Role of the USPTO in Advancing Innovation." We also offered 14 Fundamentals Training scholarships to students from Carnegie Mellon University, Duquesne University, and the University of Pittsburgh to help federal laboratories engage and recruit the next generation of technology transfer professionals.

To promote self-learning and serve a geographically diverse membership, the FLC also has produced and distributes training materials such as the Technology Transfer Video Training Program. Boxed sets of this program, which include presentation booklets, DVDs and CDs, enable technology transfer professionals and others to participate in FLC training activities at the time and place that best fit their needs.

E-LEARNING

The FY12 budget constraints on travel created a need to move toward virtual training and web accessibility. Accordingly, the Education and Training (E&T) Committee focused on designing an e-learning program that would complement the training offered at FLC meetings.

On-Demand Courses

We are developing a complete curriculum of interactive courses to be available online at the learner's convenience. The debut course, "Introduction to Technology Transfer," which is designed to serve as the starting point to navigating the basic concepts of federal technology transfer and geared toward newcomers to the field, is slated for release in summer 2013.

Webinars

The E&T Committee launched the FLC's first national webinar series in the fall of 2012. The America Invents Act Webinar Series consisted of three free, one-hour webinars timed to familiarize members with the AIA procedures as they were implemented. The series featured USPTO panelists who covered proposed and final rules for patenting and administrative trials.

EDUCATION AND TRAINING MATERIALS AND PUBLICATIONS

As a key part of our education and training program, the FLC produces critical resources that cover all aspects of technology transfer.

- ***FLC Technology Transfer Desk Reference: A Comprehensive Introduction to Technology Transfer*** is an in-depth reference guide that provides an extensive introduction to technology transfer and technology transfer initiatives and mechanisms.
- ***Federal Technology Transfer Legislation and Policy*** (known as "The Green Book") is a reference document for policymakers and technology transfer practitioners in the federal government that provides the principal statutes and presidential executive orders that comprise the framework of the federal technology transfer program. The Green Book is the FLC's premier reference material.

ONLINE RESOURCES

- **E-books**—In FY12, we issued The Green Book and the *Desk Reference* in e-book format. These books, available online at www.federallabs.org, as well as in major online stores and multiple formats, can be downloaded on e-readers and mobile devices.
- **From the Source**—We enlisted the USPTO patent reform coordinator to write a monthly column in our electronic newsletter, *FLC NewsLink*, to educate the public about the AIA, as well as any new issues or implementation timeline.

- **Reference Guides**
  - Technology Transfer Training Resources Database (TRDB), a searchable database that identifies current technology transfer training courses and resources within the federal laboratory system, the FLC, academia, and not-for-profit technology transfer organizations.
  - T2 Mechanisms helps stakeholders identify different ways of working with federal laboratories.

FLC MEMBER E&T EFFORTS

In addition to the FLC's education and training curriculum, individual FLC members take a great deal of personal effort to educate the tech transfer community and stakeholders. Members perform this service in the labs and one-on-one to entrepreneurs, members of Congress, senior agency staff, and international delegations, as well as at events, webinars, and programs. Examples include the Department of Commerce's Special American Business Internship Training (SABIT) program, technology transfer and federal laboratory training at government organizations such as the USPTO and the Office of the U.S. Trade Representative, the American Chemical Society's Science and Congress series, and the Science Diplomats' Club's Scientific Breakfast series.

FUTURE OUTLOOK

The FLC plans to grow its online training efforts in the future to accommodate changing trends in learning, the need for information in real time, and the reduction in available travel funds. Next year will bring a new webinar series, short videos, and additional e-learning initiatives. Specifically, webinars are in development to cover the basic information included in the Fundamentals Training. Webinar topics will include "Future of T2 Metrics and Update on the Presidential Memorandum," "Introduction to Intellectual Property," and "Open Innovation and Technology Scouting." In addition, once AIA policies take full effect, many of the FLC's training courses and reference materials will be revised with respect to intellectual property and patents. As such, new editions of the *Desk Reference* and The Green Book will be produced.

> "The E&T Committee fully supports the FLC mission to provide consistent and current excellent educational opportunities for technology transfer professionals, including pertinent tools of reference. We continually strive to improve our coursework and supplemental materials through frequent evaluation and input from the FLC community."
>
> **– Sarah Bauer, Education and Training Committee Chair**

Working With State and Local Governments

State and local governments are an important link in federal technology transfer as they typically work closely with the businesses, universities, and other organizations that can benefit from Federal Laboratories' technological innovation. In FY12, the FLC engaged in a number of activities to encourage technology transfer between federal laboratories and state and local entities, including commissioning a study on the landscape of federal laboratories and technology-based economic development (TBED) entities; promoting collaboration through relationships, events, and outreach; and maintaining resources for state and local stakeholder communities.

TECHNOLOGY-BASED ECONOMIC DEVELOPMENT STUDY

In FY12, the S&LG Committee, in coordination with the Midwest Region, began a pilot study to document the network of Midwestern federal labs and TBED entities. The Indiana Business Research Center (IBRC) was commissioned to collect data on entities that either have been involved with, or are interested in, facilitating the transfer and commercialization of technologies developed by federal laboratories. The study's goal was to better understand the direct and indirect relationships that technology development, transfer, and commercialization organizations have with federal laboratories. IBRC was also tasked with chronicling the key takeaway issues and recommendations that would strengthen the relationships between federal labs and TBED entities. The geographic scope of the pilot project was defined to include TBED organizations and federal laboratories located in the six states of the FLC's Midwest Region.

The results of the study included data on nearly 250 TBED entities and insights from more than 50 interviews with TBED staff to gather information and recommendations for strengthening relationships with federal labs and increasing technology commercialization. The findings included a recommendation for creating incentives to increase entrepreneurship within the federal labs.

PROMOTING STATE AND LOCAL ECONOMIC DEVELOPMENT THROUGH COLLABORATION

In FY12, the FLC continued to nurture close relationships with longtime strategic partners such as the State Science and Technology Institute (SSTI), which brings together key individuals working in state science and technology programs in almost all 50 states (through SSTI) and federal technology transfer staff, the Executive Branch, and Congress (through the FLC). The FLC also reached out to NIST Manufacturing Extension Partnership (MEP) offices, a network of technical experts that aid small and mid-sized manufacturing businesses at state and local levels. With offices in every state, the MEP is a powerful resource that can guide local businesses to federal labs that may have the expertise, facilities, or technologies they need. The FLC Technology Locator works with MEP staff to promote and facilitate these connections.

Relationships at the regional level are equally important to the FLC's mission to work with state and local governments. FLC regions have formed relationships, partnerships, or initiatives with government and economic development organizations within their borders. For example, the FLC has focused on increasing

"Establishing partnerships with…state and local governments has always been a key component of federal laboratories getting the most leverage out of making their technologies accessible to the public; but now these partnerships are proving to be even more valuable as laboratories devise strategies on how to do more with less….The FLC…helps regional, state and local organizations to better harvest value from these laboratories."

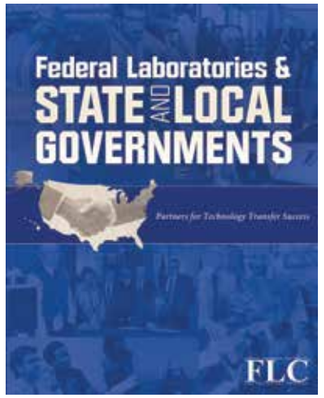
– Belinda Snyder, State and Local Government Committee Chair

collaborative efforts with Montgomery County Department of Economic Development (MONTCO) due to the large number of federal laboratories that support business in the county. This collaboration has resulted in a multi-component program with the Mid-Atlantic Region and MONTCO that includes T2 Speaker Series, Gateway to Innovation Welcome Center, FedTechNet, CSO Boot Camp, Post Doc Conference and the new Innovation 2 Commercialization conference. This type of collaborative partnership will be a model for other economic development organizations to form synergistic relationships with federal entities in their respective jurisdictions. Other relationships include the Chesapeake Crescent Initiative, Growth Alliance of Greater Evansville, New Jersey Regional Homeland Security Technology Committee, and Florida Energy Systems Consortium. In many cases, the S&LG Committee supports regional participation in events. In FY12, the FLC participated in regional events, such as the Northern Colorado Technology Transfer Fair; Washington, D.C. Metro Forum; Maryland Entrepreneur Expo; and Southern Virginia Advanced Materials Forum.

S&LG Committee members attend economic development events, such as the SSTI annual meeting and regional meetings held by the Association of University Research Parks (AURP) and the International Economic Development Council (IEDC), to network with and present information to TBED professionals. Furthermore, state and local economic development awards at both the national and regional levels encourage successful technology transfer and collaboration with state and local governments.

RESOURCE MATERIALS

The FLC's biannual publication, *Federal Laboratories & State and Local Governments: Partners for Technology Transfer Success*, highlights exemplary collaborations between federal laboratories and state government entities, and provides a compendium of federal laboratories broken down by FLC region and state. This valuable tool for federal, state, and local government representatives, is available at no charge in print and electronic formats.



Online state profiles illustrate federal laboratory investment and return on investment at a state level. Each state profile provides a snapshot of technology transfer activities in that state, including information on federal R&D investments by state, contacts at in-state federal laboratories, and local success stories. The profiles serve as a resource to engage and involve potential parties that have an interest in federal technology in their geographic region.

FUTURE OUTLOOK

The final report of the TBED study is slated for release in FY13. Additional plans are under development to replicate the study in other FLC regions beginning the next fiscal year. The S&LG Committee also intends to work with SSTI to develop a webinar that guides state stakeholders on how to work with federal laboratories.

Communications and Outreach

At its core, the FLC's mission is to advocate, support, and facilitate federal technology transfer. As such, communications and outreach serve as key means of accomplishing this mission. The FLC has crafted a comprehensive communications and outreach program to support targeted audiences—both internal and external. The FLC engages and informs industry, academia, state and local government organizations, and the public about technology transfer and our services and resources—with the ultimate goal of bringing about technology transfer partnerships.

One theme of the FLC's efforts in 2012 was modernization. The explosion of social media and other online tools has enabled the FLC to reach out in new ways, bringing the organization closer to innovative companies that are potential lab partners and to the next generation of technology transfer professionals.

FLC WEBSITE

The FLC website, www.federallabs.org, is a hub of technology transfer information for member laboratories, agencies and potential partners, attracting a wide variety of users from government, academia, and industry. The site, which has wide-ranging search capability, provides extensive information about the FLC and federal technology transfer, including technology transfer legislation and policy, commercialization success stories, and the primary FLC points of contact. Some of the key resources found on the website include: the new Available Technologies search tool (see page 10); the Federal Laboratory Database, which includes information (e.g., points of contact, capabilities, expertise) about each federal laboratory; the Technology Transfer Mechanisms Database; State Profiles, including federal R&D funding and member laboratories; the Technology Locator service and request form; and an events calendar. The website also contains access to online publications and educational materials, information about the FLC recognition and awards program, and all details relevant to past and upcoming national meetings, including proceedings.

SOCIAL MEDIA

In FY12, the FLC continued to expand its social media presence to reach more members and potential partners in real time, as well as to highlight more and varied successes, opportunities, and lab features. The FLC's audience consists of nearly 1300 Twitter followers who read multiple tweets per day, in addition to ongoing posts on Facebook and LinkedIn. Since our social media debut, we have seen an astronomical increase in activity on its pages—between 150 and 200 percent across platforms. In addition, we supplemented the 2012 national meeting with FLC Connect, a social network designed to increase attendees' engagement before, during, and after the meeting.

72,014 VISITS

- **46,280 UNIQUE VISITORS**
- **247,117 PAGE VIEWS**
- **62.6% NEW VISITORS**

WEB AND VIDEO COMMUNICATIONS

In keeping with the focus on modern media and online tools, in 2012 the FLC adopted new virtual communication tools. Live-streaming the plenary sessions from the 2012 national meeting brought the five most important sessions from the meeting to those unable to attend.

The FLC also introduced a new online meeting tool—an innovative videoconferencing solution—enabling outreach and business to be conducted in a new way and saving travel dollars. This tool allows users to "meet" using video, audio, and/or desktop and application sharing. The service has already been implemented for Executive Board and committee meetings; and as travel budgets shrink, the Communications Committee is developing further creative uses for outreach by the FLC and member laboratories.

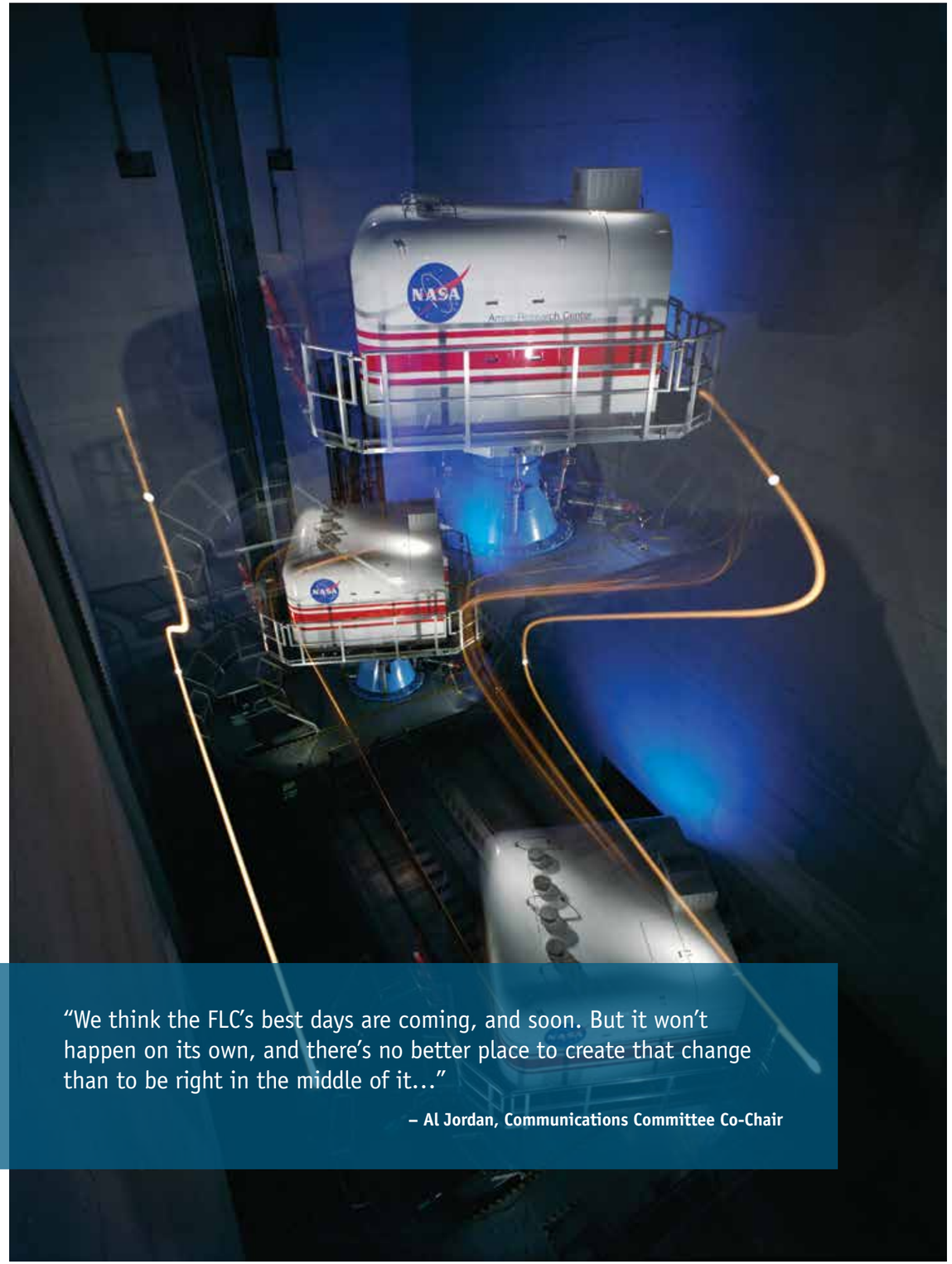
INTERNAL COMMUNICATIONS

The FLC provides electronic roundtables that enable FLC representatives from member laboratories and agencies throughout the country to meet virtually. This roundtable system provides a work group environment for complete communications through email for all FLC members—as well as specific FLC member interest groups such as the agency representative, laboratory director, and committee roundtables.

OUTREACH MATERIALS AND PUBLICATIONS

Each year the FLC publishes attractive and informative publications, bringing a high level of publicity to programs, laboratories, and award winners in an effort to share the stories of technologies emerging from federal laboratories.

- ***FLC NewsLink*** has been a mainstay of the FLC communications toolset for over a decade, growing from a few printed pages to an expanded monthly electronic version. At the start of FY12, *FLC NewsLink* transitioned to a completely online product. Our new blog-style format encourages communication with member agencies, laboratories and external partners, and gives the FLC community an insight into ongoing activities. The newsletter enables the FLC to keep members and external partners informed about federal technology transfer news, technologies, research, success stories, websites, and events. With unlimited space, the FLC audience could see a new post every day, with more than 21,000 views in a year. Monthly email digests reached a subscriber list that includes members of industry, academia, state and local governments, media representatives, professional associations, and federal laboratories and agencies.



"We think the FLC's best days are coming, and soon. But it won't happen on its own, and there's no better place to create that change than to be right in the middle of it..."

– Al Jordan, Communications Committee Co-Chair

- ***Technology for Today*** is a highly effective tool for promoting the national benefits of federal technology transfer. This publication highlights 20 to 30 technology transfer success stories that are written in an informative and engaging manner. The stories show how technology recently transferred from the federal labs is in use today—creating economic development and improving the quality of life for American citizens through medical, environmental, agricultural, energy, transportation, public safety, and limitless other technological advances. The publication also includes articles about federal laboratory programs aimed at increasing student interest in science, technology, math, and engineering (STEM).
- The ***FLC Planner*** is a planning tool that uses eye-catching federal technology transfer images and captions submitted by the laboratories to promote the benefits of federal technology transfer and the technical expertise of FLC member laboratories in an easy-to-use, large-format planner.
- The **Technology Locator brochure** introduces potential partners from industry, academia, and the public sector to the FLC's free service that matches commercial and industrial technology needs with federal laboratory inventions and capabilities.
- The **2012 awards program booklet** showcased outstanding technology transfer achievements. It was distributed at the awards ceremony held at the national meeting.
- Other informational and promotional materials produced and distributed in FY12 include a number of laboratory media packets promoting the value of government technology transfer and the federal laboratory system. The FLC also produced and distributed outreach material concerning the annual national meeting and materials used at the meeting.

PUBLIC AFFAIRS AND CONFERENCES

To spread its technology transfer message, the FLC seeks publicity throughout the year and conducts media outreach to general interest media (e.g., newspapers) and targeted trade publications. The FLC takes advantage of low- or no-cost opportunities for mutual marketing with other technology-related organizations, e.g., reciprocal website links and co-sponsorships of technology-related events. Some of these organizations include the Association of University Research Parks (AURP), the World's Best Technology Showcase (WBT), and the Licensing Executives Society (LES).

The FLC keeps congressional and agency staffs informed of its activities and relevant initiatives. For example, in FY12 the FLC briefed the staff of the Office of the United States Trade Representative and the USPTO on

federal technology transfer; the staff of the Congressional Technology Transfer Caucus on technology transfer issues; and the staff of Germany's Fraunhofer Institute for Chemical Technology, and members of the Ukrainian and Thai science and technology delegations on federal technology transfer. Much of this is accomplished through the efforts of the DC Liaison, who also keeps FLC members up-to-date on legislative developments through a monthly column and biweekly email updates.

The FLC's outreach program recognizes the value of face-to-face interactions and networking. The FLC implements this outreach by attending and exhibiting at regional and national conferences, trade shows, and related events. The FLC displays and staffs an exhibit booth designed to effectively communicate what the FLC and its members offer to potential industry partners and other interested parties. In FY12, the FLC exhibited, attended, or presented at the following events, among others: the State Science and Technology Institute (SSTI) annual conference; the AUTM and LES joint national meeting; the AURP International Conference; the Small Business Innovation Research (SBIR) Conference; the International Society of Optical Engineering (SPIE) Optics and Photonics Conference; and the RESNA Annual Conference. Additionally, FLC members have attended and spoken for the FLC at events such as the Navy Opportunity Forum, International Economic Development Federal Forum (IEDC), Maryland Montgomery County Economic Development speaker series, and the American Nuclear Society annual meeting.

FUTURE OUTLOOK

In FY13, the FLC Communications Committee plans to expand its strategy for industry outreach and increase its focus on economic development. In addition, new initiatives include launching a YouTube channel and continuing to build an online social network to communicate and share ideas. In the interest of modernization and saving printing costs, the print version of *Technology for Today* was discontinued for 2013, and the FLC is developing online methods for sharing more of those success stories, with a greater reach and without page limitations.

The FLC is further seeking to enhance its ability to connect technology transfer professionals through virtual means. With budget restraints and travel restrictions, we envision our videoconferencing and web-based meetings serving as an important means for our members to communicate. The human element of outreach can never be fully replaced so, rather than replacing travel, the intent is to communicate better and more efficiently when in-person meetings are not possible.

FLC National Meeting

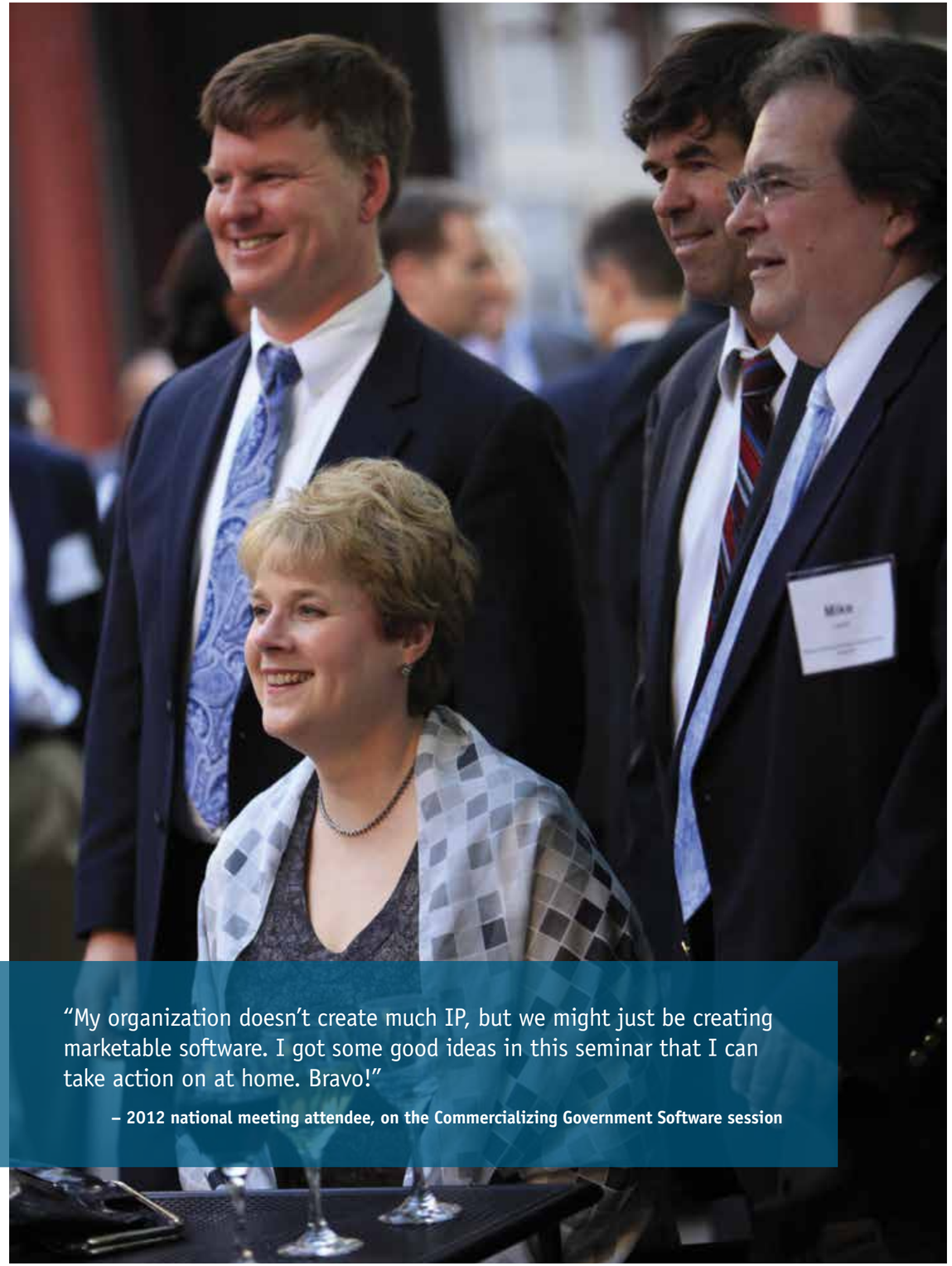
The FLC national meeting serves as the annual culmination of the FLC's efforts in education and training, membership networking, and award recognition. The exchange of information that occurs at the national meeting through formal training, seminars, topic sessions, panel discussions, special events, exhibits, and formal and informal networking is essential to the success of federal laboratory technology transfer efforts. Each year, robust discussions of new ideas, lessons learned, and innovative T2 approaches occur. The national meeting is the central hub where T2 professionals obtain the learning, tools, contacts, support, and creative spark they need to excel at their jobs.

In addition to federal laboratory personnel, the national meeting also seeks the participation of potential technology partners from state and local government organizations, industry, and academia. The FLC recognizes the opportunity to introduce these participants to the benefits of partnering with federal labs. The national meeting stimulates interest in technology transfer through media coverage, as well as the involvement of local businesses at events such as Industry Day. Furthermore, the national meeting is a venue for conducting Consortium business, including FLC elections, as well as Executive Board, regional, laboratory director, committee, and agency meetings.

The 2012 national meeting, *Bridging Federal Technologies and Industry*, was held in Pittsburgh, Pa. Most of the more than 480 registered attendees and exhibitors were federal laboratory employees; however, many members of industry, economic development organizations, and academia also attended. Each year, the FLC Program Committee ensures that the national meeting agenda focuses on providing technology transfer professionals with the tools and information they need to facilitate the transfer of federal technologies and capabilities to the marketplace.

HIGHLIGHTED PANELS AND PRESENTATIONS:

- Patent Reform: The AIA and the FLC; Commercializing Government Software
- The Great Debate—Which Metrics Matter
- "10 Deals in 6 Months": Leveraging Your Network for Fast Impact!
- Technology Transfer Innovation in Response to the President's Challenge
- Entrepreneurship Programs and the Federal Labs
- Making Social Media a Reality, at which successful implementers advised on using social media tools to market lab technologies.



"My organization doesn't create much IP, but we might just be creating marketable software. I got some good ideas in this seminar that I can take action on at home. Bravo!"

– 2012 national meeting attendee, on the Commercializing Government Software session

The meeting agenda featured a full day of formal training courses (Fundamentals, Intermediate, and Advanced). The keynote speaker, Brian E. Joseph, co-founder of Touchstone Research Laboratory, presented an address on the "innovation factory" model he uses to develop, patent, and commercialize "breakthrough" products at a rapid pace. The national meeting also provided a showcase for the FLC's prestigious technology transfer awards program, including an interactive poster session that highlighted the R&D achievements of award-winning FLC laboratories and researchers. Additional events included a Tech Fair for laboratory and industry exhibitors, and Industry Day, which featured special sessions geared toward the members of industry present. National and local businesses were invited to network with the labs and learn about their capabilities at Industry Day.

In addition to the traditional meeting elements, several new features debuted in 2012, including live-streaming of plenary sessions and the launch of FLC Connect, a social network that allowed attendees to plan their side meetings, do pre-work, network in advance, establish groups, brainstorm, and discuss topics for breakout sessions.

FUTURE OUTLOOK

Due to the fiscal constraints our government faces, the FLC made the difficult, but fiscally responsible, decision to cancel the 2013 national meeting, which was scheduled to be held in Westminster, Colo. The Program Committee instead geared its efforts for 2013 to providing the most critical information to FLC members through webinars. The FLC plans to hold a national meeting in 2014 near Washington, D.C.

Technology Transfer Awards Program

The FLC also encourages technology transfer through its awards program, which honors the technology transfer efforts of federal researchers, technology transfer professionals, and industry partners. The high-profile FLC awards have steadily gained prestige in the technology and business communities, leading to spirited competition each year among the nominees. At the same time, these honors provide the laboratories with incentive to encourage their employees to engage in technology transfer activities. The FLC uses the program, in combination with the accompanying technology transfer success stories, as a vehicle to promote the overall FLC mission. The winners and their stories are publicized in national and local media, as well as the FLC community. They are visible proof that technology transfer works and that FLC involvement is a key element in its success.

The Naval Air Warfare Center Aircraft Division, Patuxent River, was a 2012 honoree for a highly efficient and environmentally preferable air conditioning system, which was licensed by OxiCool, Inc., a startup company based in Philadelphia, Pa. The system uses water as a refrigerant and heat as its primary energy source. OxiCool has further developed the technology for use on heavy trucks as an idle-reduction solution. The licensed technology not only eliminates the need for greenhouse gas-based refrigerants, but also lowers the operating and maintenance costs of cooling.

Since the launch of the annual awards program in 1984, the FLC has presented more than 885 awards to over 200 federal laboratories. Because the technology transfer efforts of the FLC are both diverse in scope and large in number, eight national categories have been established to recognize significant accomplishments in technology transfer by individuals, laboratories, agencies, and their partners.

In 2012, more than 125 nominations submitted by federal laboratories were judged by Awards Committee and National Advisory Council members. Panels comprising distinguished scientists and engineers from federal laboratories, industry, and academia reviewed the nominations and selected the winners. Thirty-three awards were presented, representing 28 laboratories across 5 agencies.

These winners and their commercialized technologies have saved thousands of lives, established multiple industries, and created jobs and value for industry partners, for example:

- A procedure for fighting invasive species, which impacts about 3 million acres for a projected $168 million in value to producers over 20 years
- Materials that help cookstoves emit fewer harmful gases, which could prevent up to 2 million premature deaths a year and reduce toxic emissions that discharge up to a third of the world's black carbon
- An alloy that improves coronary stents—saving lives and gaining the industry partner a 45% market share and $1 billion in sales
- A novel method of vaccination against rotavirus, which causes millions of hospitalizations and the deaths of about 527,000 children worldwide
- Software that scans smartphones for tampering up to 94% faster, with $25 million in revenue projected in the first year
- A compound—isolated from a marine sponge—that is used to synthesize powerful cancer treatments
- An antibody that reduces brain lesions caused by multiple sclerosis by up to 78 percent.

Awards for Excellence in Technology Transfer

ADVANCED DIVER'S MASK-MOUNTED DISPLAY SYSTEM
Naval Surface Warfare Center, Panama City Division

AIR-CONDITIONING SYSTEM (OXICOOL)
Naval Air Warfare Center Aircraft Division, Patuxent River

CHEMICALLY ETCHED EMITTERS FOR NANOELECTROSPRAY IONIZATION MASS SPECTROMETRY
Pacific Northwest National Laboratory

DEVELOPMENT OF ERIBULIN, A POTENT ANTI-CANCER AGENT, FROM A MARINE SPONGE
National Institutes of Health, National Cancer Institute

DEVELOPMENT OF A PLATINUM-CHROMIUM ALLOY FOR IMPROVED CORONARY STENTS
National Energy Technology Laboratory

ECOLOGICALLY BASED INVASIVE PLANT MANAGEMENT OF INVASIVE ANNUAL GRASSES
Agricultural Research Service

HEAT-INACTIVATED ROTAVIRUS VACCINE
Department of Health and Human Services, Centers for Disease Control and Prevention

HONEY BEES WITH *VARROA*-SENSITIVE HYGIENE
Agricultural Research Service, Honey Bee Breeding, Genetics and Physiology Laboratory

INFICOMM: WIRELESS MONITORING TECHNOLOGY FOR OIL AND GAS WELLS
Los Alamos National Laboratory

AN INTERACTIVE SOFTWARE PACKAGE FOR THE ANALYSIS OF MICROARRAY DATA
National Institutes of Health, National Cancer Institute

MATERIALS FOR A LOW-COST, CLEAN COOKSTOVE
Oak Ridge National Laboratory

METHOD OF TAMPERING DETECTION FOR DIGITAL DEVICES (AUTOBERRY)
National Security Agency

NANOMETER-SCALE WET SAMPLE IMAGERY FOR TRANSMISSION ELECTRON MICROSCOPES
U.S. Army Engineer Research and Development Center - Construction Engineering Research Laboratory

NAVSOLVE™ ENVIRONMENTALLY FRIENDLY CLEANING SOLVENT
Naval Air Warfare Center Aircraft Division, Patuxent River

RECYCLING OF STRONTIUM-82 FOR USE IN MEDICAL DIAGNOSTIC IMAGING
Los Alamos National Laboratory

RESIN WAFER ELECTRODEIONIZATION
Argonne National Laboratory

STRETCHED LENS ARRAY: ULTRA-LIGHT, AFFORDABLE GREEN ENERGY TECHNOLOGY
NASA Glenn Research Center

TACTICAL-BIOLOGICAL DETECTOR
U.S. Army Edgewood Chemical Biological Center

USE OF THERAPEUTIC ANTIBODIES AS A NOVEL TREATMENT FOR MULTIPLE SCLEROSIS
National Institute of Neurological Disorders and Stroke

VIBRO-TACTILE STIMULATION DEVICE AND METHOD FOR SWALLOWING DISORDERS
National Institute of Neurological Disorders and Stroke

VIRTUAL GROWER SOFTWARE FOR GREENHOUSE CROP PRODUCTION
Agricultural Research Service, Midwest Area

Laboratory Directors of the Year

Dr. Samuel Aronson, Brookhaven National Laboratory

Douglas Bowers, Air Force Research Laboratory Propulsion Directorate

Michael Kluse, Pacific Northwest National Laboratory

FLC Service

Harold Metcalf Award: Victor Chavez, Agricultural Research Service

Representative of the Year: John Dement, Naval Surface Warfare Center, Crane Division

Interagency Partnership

Naval Sea Systems Command, Naval Surface Warfare Center Carderock Division and Pacific Northwest National Laboratory

Outstanding Technology Transfer Professional

Dr. Charles Schlagel, Naval Medical Research Center

State and Local Economic Development

Sandia National Laboratories and the Sandia Science & Technology Park

Rookie of the Year

Holly Victorson, Air Force Research Laboratory Space Vehicles Directorate

STEM Award

Ricardo Negron, Air Force Research Laboratory

FUTURE OUTLOOK

Looking ahead, the Awards Committee will remain committed to making the program inclusive and representative of the diverse agencies that comprise the Consortium's membership. To ensure that the FLC awards best reflect the practice of technology transfer, the committee will continue to thoroughly review awards criteria and procedures in light of changing trends and conditions in the field. The committee also will seek ways of recognizing 2013 honorees that enable the greatest reach and participation while travel is difficult or prohibited.

"New Mexico is home to some of the finest laboratories and research parks in the world. The public and private partnerships at [award winner] SS&TP have created high-paying jobs for New Mexicans while advancing some of the world's most innovative technologies....The success at SS&TP is surely a model that should be replicated around the country...."

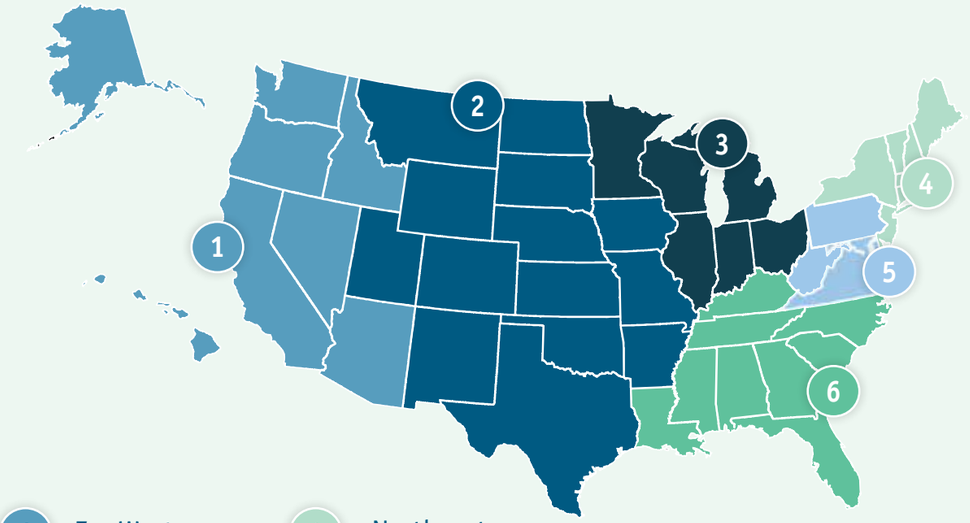
– Sen. Martin Heinrich

Regional Activities

Through the activities of its six regions, the FLC is able to provide members with an added layer of education, training, and networking opportunities on a regional level. In this way, the work of the FLC national organization is both supplemented and magnified, significantly contributing to the success of federal technology transfer. Grouping the federal laboratories into geographic regions allows a "local" focus, and often results in key collaborations and the immediate sharing of lessons learned and best practices between laboratories based on their affiliation with the region. For example, many laboratories in the Mid-Continent Region collaborate on responses to natural disasters.

The FLC regions also promote technology transfer through active outreach to technology-based economic development groups, industry, businesses, and academia within the region. Regional representatives attend and exhibit at conferences, and many of the regions host events such as tours of federal laboratories and networking meetings with local industry groups. Each region maintains a website, and several produce quarterly electronic newsletters. In addition, many regions conduct STEM outreach programs.

Each region provides its members with training and networking opportunities at one or more regional meetings. Several regions host joint meetings to share costs and provide content to more members.



FAR WEST

Small businesses and startups have been a major focus of the Far West Region for many years, and that trend continued in 2012. Regional efforts included helping businesses use FLC resources to find laboratories with expertise and research in specific technical areas of interest. The Region worked with the "high tech" small business community, as well as state and local economic development organizations, to highlight opportunities to partner with federal laboratories and foster innovation through programs such as SBIR, STTR, Rapid Innovation Fund, and Commercialization Pilot Programs.

SBIR/STTR in particular formed a significant part of the Region's efforts. In 2012, several changes in the laws and rules affecting the SBIR/STTR programs were enacted. The Far West served as a trusted source for information and guidance on adapting to these changes, both at outreach and educational events and as a "go-to" resource.

The Region's outreach efforts focused on the small business community, including an innovative technology transfer program that uses effective SBIR relationships to accelerate federal technologies. The Region also continued to function as a speakers bureau for SBIR and technology transfer events, and provided specific sessions and speakers at conferences on the topic of federal lab and agency participation in small business programs.

The Far West promoted its member laboratories and provided education at a number of events, many in conjunction with the Mid-Continent Region. Most events focused on SBIR, including agency-specific SBIR training and conferences, TechConnect, the SBA Tibbets Awards presentations, and the SBIR and Global Trade Summit.

Through its regional awards program, the Far West recognized 13 successes in four categories: Outstanding Technology Development, Outstanding Partnership, Outstanding Commercialization Success, and Technology Transfer Professional of the Year. Awards were presented at the Far West/Mid-Continent regional meeting.

FUTURE OUTLOOK

The Far West Region plans to use its network to "signal boost" labs' technology marketing efforts—increasing their visibility without a cost to the labs—by expanding its promotion of regional laboratories' resources and capabilities for CRADAs and other technology transfer mechanisms.

> "The Far West has always had a focus on small business and startups, but not at the expense of large industry and academia."
>
> **– Brian Suh, Far West Regional Coordinator**

MID-ATLANTIC

The Mid-Atlantic Region concentrated the majority of its FY12 efforts on technology forums and showcases, highlighting technologies that are available and/or being developed in its federal labs. The Region hosted several technology-based forums—including the Advanced Material Forum, Washington Metro Forum, Southern Maryland Higher Education Center Technology Showcase, and the NIST Material Measurement Lab Showcase—and participated in a number of other events, such as the Postdoc Conference and Career Fair, Innovation 2 Commercialization Conference, Commercializing Innovation Forum, and Maryland Entrepreneur Expo.

The Region supported the Chief Science Officer Boot Camp program held at Montgomery College, a 45-hour, two-module training program designed to help researchers move into scientific management careers. Regional leaders formed relationships with local organizations like the Montgomery County Department of Economic Development and the Chesapeake Crescent Initiative, for which the 2012 Regional Coordinator and Deputy Regional Coordinator led a webinar introducing members to partnering with federal laboratories in the Region. Outreach efforts were heavily centered in Maryland, which houses the vast majority of the Region's member labs.

Five labs were recognized with Awards for Excellence in Technology Transfer. In addition, the Mid-Atlantic Region presented one award in each of the following categories: Interagency Partnership, Outstanding Technology Transfer Professional, State and Local Economic Development Honoree, STEM Honoree, and Representative of the Year.

FUTURE OUTLOOK

The Mid-Atlantic Region will continue to highlight regional laboratory technologies and opportunities at forums and showcases. In addition to maintaining strong connections to organizations in the Maryland area, the Region plans to expand its focus to include more opportunities in Washington, D.C. and Virginia.

> "Presenting the Chesapeake Crescent Initiative webinar on how to partner with federal laboratories…was a great opportunity to inform industry and university partners of specific mechanisms for accessing the vast resources we have within the Mid-Atlantic Region."
>
> **– Courtney Silverthorn, Mid-Atlantic Regional Coordinator**

MID-CONTINENT

The Mid-Continent's activities and themes are driven by current technology trends, and events and topics of significance to the scientific and world communities, such as natural disasters like the 2011 tsunami and resulting nuclear plant crisis in Japan. The rich technological resources of Mid-Continent Region laboratories are often on the first line of defense, as well as the recovery, from these disasters. The development and application of technologies and collaborations that are born out of the responses to such events receive attention and review at regional meetings and in the "regional conversation." Regional focus on these topics yields further collaborations, as well as technological improvements for the future. As with much of the FLC's national activities this year, helping labs adjust to the America Invents Act (AIA) was critical to the Region's efforts. The Region specifically focused on helping labs identify the correct claims, statements, and language to use in technology transfer agreements post-AIA. The Region offered support and training on the AIA, its implications to scientist and engineers at federal laboratories, and how these changes can best be managed through workable

strategies. Additional educational programs, conducted primarily at the regional meeting, covered timely issues such as energy technologies and policies; protecting software; market trends; novel technology transfer tools; job creation; and federal technology transfer programs like SBIR/STTR, the Agreement for Commercializing Technology (ACT) pilot program, America's Next Top Energy Innovator, and others.

The Region also assisted regional members and shared information on the latest breakthroughs and nuances in negotiating licenses and agreements, in addition to technology reviews of the latest technologies—from those that support the warfighter to new fuels to major breakthroughs in agriculture. Of particular interest in 2012 were new state programs supporting economic development, technology transfer and the associated best practices, as well as new and updated supporting legislation. Constituents were briefed on legislative news and these important programs at regional meetings and through the regional newsletter, web postings, and email communications.

The Region presented five labs with Awards for Excellence in Technology Transfer and five were noted for Notable Technology Development. The Region also honored an Outstanding Laboratory and two Outstanding STEM Mentors. In addition to its traditional awards, the Region paid special attention to software development, and cited two laboratories meriting honorable mention for technology development in this area.

Outreach activities included participation, often jointly with the Far West Region, in technology transfer events, particularly those focused on the SBIR program. Events included national, regional, and agency-specific SBIR conferences, as well as TechConnect, the Northern Colorado Technology Transfer Fair, and "Beyond Phase II."

FUTURE OUTLOOK

In FY13, the Mid-Continent Region will continue to focus on technology transfer programs like SBIR, economic development and support at the state level, and education and information on the AIA as its policies go into effect.

> "Creating innovative partnerships and optimizing diverse resources to transfer federally developed technologies to the public have created innovative companies and higher paying jobs. This has aided America's struggling economy, as well as strengthened its standing worldwide as a compelling and influential leader in technology development and application."
>
> **– J. Susan Sprake, Mid-Continent Regional Coordinator**

MIDWEST

The Midwest Region concentrated on networking and relationships in 2012. Creative collaboration, both with industry and between labs, is a driving force to maintaining innovation with fewer resources; therefore, building fellowship among members was the impetus behind much of the Region's outreach, training, and events. In addition to its member network, the Midwest focused on relationship-building with organizations that can foster technology transfer, such as partnership intermediaries and venture capital firms, the Indiana Battery Innovation Center, and the Original Equipment Suppliers Association. The Region worked with Ball State University to educate its members about entrepreneurship programs. While some in-person outreach efforts were curtailed for budgetary reasons, for outreach and to maintain relationships the Region used electronic means, including its quarterly newsletter, regular email discussions and an increased social media presence. The Midwest is now the most active FLC region on Twitter.

The Region honored three of its member labs with Excellence in Technology Transfer awards. The Regional Appreciation Award went to the creator of the innovative Technology Commercialization Academy (TCA), which brought university-level engineering and business students together with federal lab patents in a five-week program during which the students worked full-time to develop ideas and business strategies for commercialization of the selected laboratory patents. The TCA's success was actually a portion of a greater partnership between the Growth Alliance of Greater Evansville (GAGE), the University of Southern Indiana, and the Naval Surface Warfare Center, Crane Division. These partners pooled their resources, networks, capabilities, and expertise to increase area businesses' access to and engagement with military technology, scientific capabilities, expertise, and patents. Joint activities have included support of outreach and training programs, IP mining events, technology showcases, and commercialization workshops. These activities garnered the organizations the Midwest's Partnership Award for 2012.

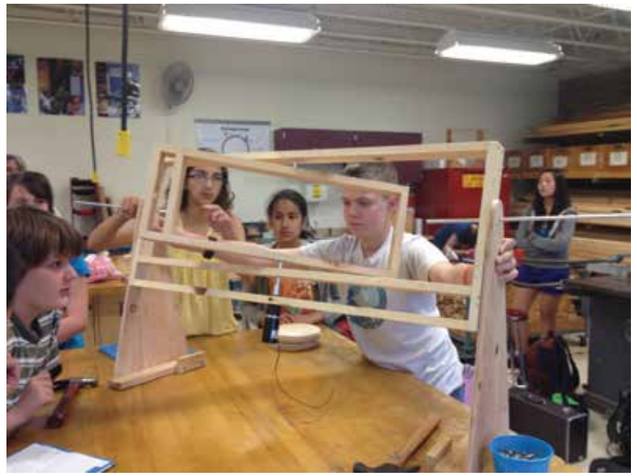
FUTURE OUTLOOK

Over the past few years, one of the Region's primary goals has been to foster academic and industry partnerships. In FY13, the Region will turn more toward partnerships with economic development organizations and investors. In addition, the Midwest Region has begun a pilot project with the Indiana Business Research Center to identify TBED and investor groups across the Midwest, with the objective of providing recommendations for strengthening the connection between federal technology transfer and economic development groups.

> "Our focus will be on fostering stronger relationships between our labs, technology-based economic development (TBED) organizations, and investor groups."
>
> **– John Dement, Midwest Regional Coordinator**

NORTHEAST

In FY12, the Northeast Region centered on several key activities. In the course of providing services to member laboratories, the Region focused on addressing new developments in technology transfer policy. The Northeast also actively supported STEM education and state and local government efforts in security and preparedness.



To promote STEM education, the Region funded four summer curriculum development projects. In a competitive process, middle- and high-school teachers submitted proposals, with each selected winner awarded a scholarship to fund their research and a stipend for project materials. Final reports and lesson plans from the winning projects were made available to teachers region-wide, thereby multiplying the benefits of the scholarships. The 2012 winning projects included an investigation into solar ovens, a STEM mentor recruitment effort, interactive digital and experiential learning in chemistry, and a composting study for middle-school students. Many regional Laboratory Representatives served as mentors for both the students and teachers during these STEM initiatives.

The Northeast Region supported New Jersey state and local government efforts in homeland security, establishing relationships with the New Jersey Regional Homeland Security Technology Committee and the New Jersey Domestic Security Preparedness Planning Group (NJDSPPG). Several regional member laboratories participate in these groups, and the Northeast Regional Coordinator also represents New Jersey federal laboratories at the NJDSPPG's monthly meetings.

The Region also recognized the successes of member laboratories through its regional awards program, presenting three awards for Excellence in Technology Transfer and a Regional Laboratory Award given to the Transportation Security Laboratory (TSL) for extraordinary efforts in the furtherance of national and regional technology transfer activities, including initiatives to capture intellectual property and encourage a culture of innovation within the lab.

FUTURE OUTLOOK

The Northeast Region will work to help its members address a number of challenges they face due to government-imposed travel restrictions and sequestration cuts. While participation in meetings and outreach activities will be reduced, the Region will investigate the use of webinars to provide training opportunities, and will use electronic means to promote technologies, maintain the STEM and awards programs, keep regional members informed, and foster interaction with the private and academic sectors.

> "Our thinking is that to fund a teacher is to affect hundreds of students—and we learned that middle- and high school teachers can stretch a penny at least a mile! It is unbelievable what they can do with a few dollars."
>
> **– Lew Meixler, Northeast Regional Coordinator**

SOUTHEAST

In 2012, the Southeast Region placed an emphasis on increasing active support to its laboratories by providing additional tools for outreach, marketing, and public awareness.

The Region developed and began implementing a social media strategy, which is critical for reaching the new generation of young innovators and researchers. Launched in FY12, the Region's Facebook page promotes laboratory activities, capabilities, awards, success stories, and other pertinent information to the general public. Along with more traditional means, Facebook is also used to maintain the Region's connection with Laboratory Representatives. The Southeast also produced a new public awareness and outreach tool for member laboratories, working with the most active laboratories to create banner stands for dual use by the region and the labs. The banners highlight the FLC, Southeast Region, and individual laboratories. The goal of this project was to provide member lab technology transfer offices with high-quality visual banners to be used internally in the laboratories, at awards presentations, and externally at trade and industry shows and other occasions.

Additional projects included providing training related to licensing and patenting/licensing issues, as well as conducting an inventory of the STEM-related programs, activities and partnerships ongoing in regional laboratories. The Region will use the data collected to illustrate the serious commitment and involvement of the federal laboratories in STEM, both in the Southeast Region and nationally.

Four regional awards were presented in two categories. Three laboratories were recognized for excellence in technology transfer – for commercialization successes such as a novel method for inactivating rotavirus cells for use in a rotavirus vaccine projected to save the lives of up to 500,000 children per year, an expedited license agreement for an industry partner to develop and sell a relatively nontoxic solvent blend that replaces currently banned solvents in the U.S. and abroad, and the commercial development of cholesterol-lowering dietary supplements containing a blueberry extract. The Region also honored scientists at the Agricultural Research Service's Mid South Region

for the Project of the Year—a genetically modified strain of honeybees that are capable of fending off *Varroa* mites, which are a leading cause of honeybee colony collapse. This effort may prove crucial to the bee pollination industry and American agriculture, as honeybees pollinate more than $15 billion worth of crops annually.

FUTURE OUTLOOK

The Southeast Region is developing other means to provide networking and communications capabilities to its member laboratories due to government travel and conference attendance restrictions. Plans include increasing electronic outreach and communications capabilities, in particular through social media; giving small awards presentations at each winner's laboratory; and producing additional promotional banner stands for regional laboratories.

"I have been very pleased by the visibility this banner stand has given our office. This was a good idea!"

– Mark Reeves, Oak Ridge National Laboratory

Regional Meetings

At annual regional meetings, current and emerging technology transfer topics are explored through panel discussions, interactive workshops, educational sessions, and other activities. Since not every member of the FLC can attend the national meeting, these regional events keep technology transfer professionals informed and engaged. A highlight of most meetings is the regional awards presentation, which fosters technology transfer by recognizing the successful efforts of federal laboratory scientists, researchers, and technology transfer professionals.

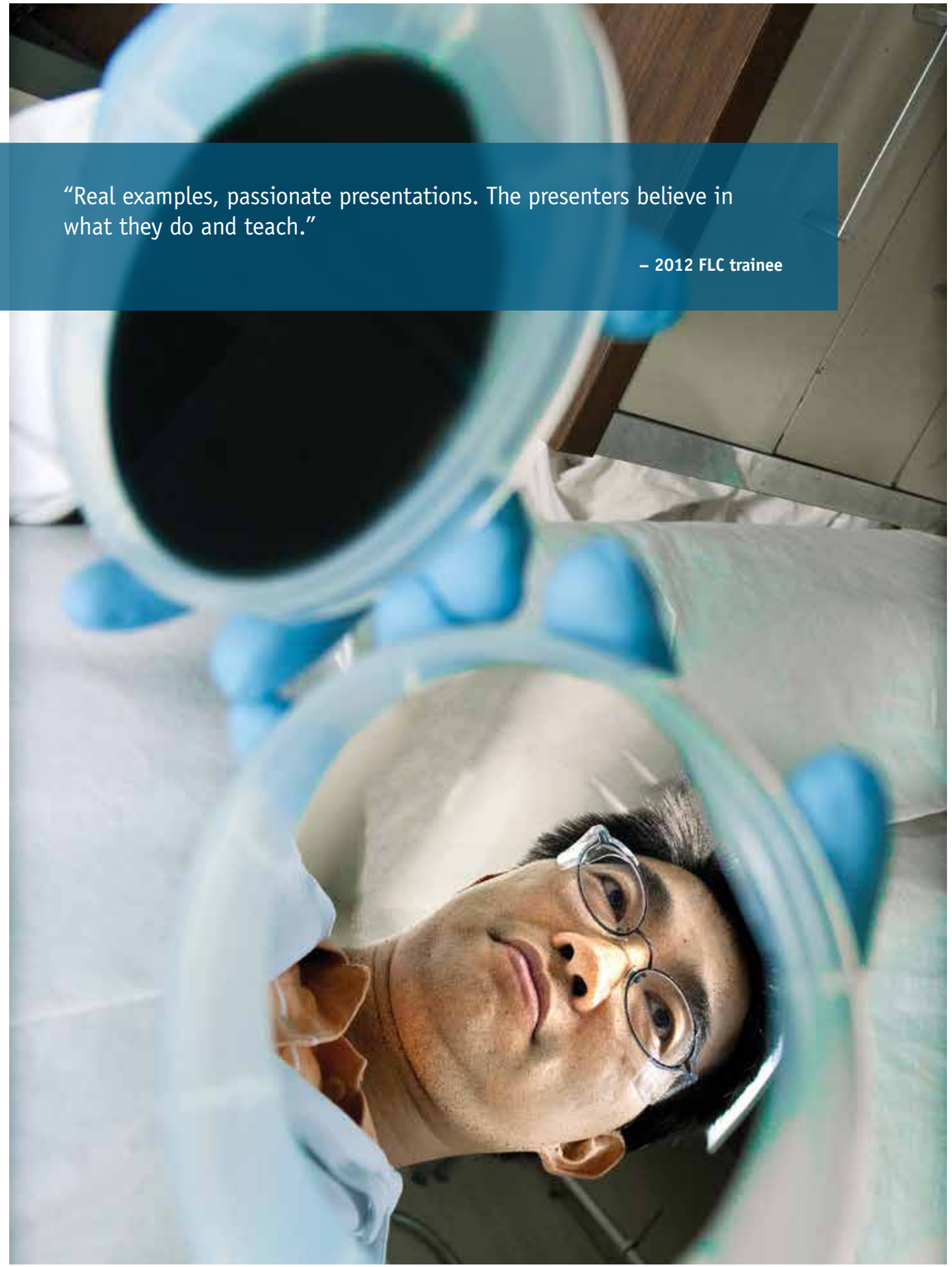
Traditionally the host of the earliest regional meeting during the calendar year, the **Southeast Region** invited members to Orlando, Fla., in February for a regional meeting with the theme of *Thinking Outside the Box*. As the theme suggests, the event focused on innovative approaches to technology transfer, including StartupQuest, a pilot technology commercialization training program for entrepreneurs; Central Florida-Space Coast regional economic development partnerships, such as the Florida Cleantech Acceleration Network and Florida Energy Systems Consortium; STEM-related programs and activities in the Region's laboratories; and valuating technologies for transfer. In addition to these innovations, the meeting provided information and training on the America Invents Act and updates to the SBIR/STTR programs. Attendees and award winners also toured Navy Training Systems Division Orlando and the University of Central Florida's Institute for Simulation Technology.

The **Northeast Region** held two meetings during the year. The spring meeting, held in March at the John A. Volpe National Transportation Systems Center in Cambridge, Mass., featured sessions on new patent laws; the use of social media for technology transfer; and strategies for collaboration and growth, especially in the transportation arena.

In August, the **Northeast** and **Mid-Atlantic** regions combined their resources to hold a joint fall meeting. Held in Cambridge, Md., its theme was *Navigating the Changing Landscape*. Richard Bendis, President and CEO of BioHealth Innovation, provided the keynote address. Sessions had a distinct focus on technology transfer training in the new climate, including export control reform, developing e-learning programs, technology transfer metrics and the Presidential Memorandum, entrepreneurship, international collaborations, working with universities, and collaboration between contracts and technology transfer offices.

Also in August, the **Midwest Region** held its 2012 meeting in Dayton, Ohio. The meeting's most distinctive feature was its location—the Wright Brothers Institute's Tec^Edge Innovation and Collaboration Center (Tec^Edge ICC). The Center is a meeting space designed to encourage a "culture of collaborative innovation" through its layout, equipment, tools for collaborative problem-solving, and unique labs. In this environment, attendees tackled issues such as dealing with budget shortfalls through collaboration development. Attendees also learned about working with partnership intermediaries and unique investment vehicles, including Allied Minds Federal Innovations (AMFI), which was designed to commercialize ideas and intellectual property generated by federal research institutions and universities. Sessions and activities were designed to encourage participants to consider collaborative tech transfer efforts. Member labs presented their most promising initiatives and programs in the areas of energy and human performance, which were the technical topic themes for the meeting. A tour of the Air Force Research Laboratory's Energy and Human Performance directorates capped off the meeting, enabling members to realize the scope of laboratories' capabilities and research, and with the intent of encouraging attendees to consider possible applications. This paid off in real time as attendees began holding side meetings with T2 collaboration potential both throughout the meeting sessions and after the tour.

For the past several years, the **Mid-Continent** and **Far West** regions have collaborated to hold a joint regional meeting in the fall. The 2012 meeting took place in September in San Antonio, Texas, with the Mid-Continent's NASA Johnson Space Center and Army Institute of Surgical Research serving as laboratory co-hosts. Focused on the theme of *Jump Starting American Innovation With Federal Technologies*, the meeting covered such topics as business aspects of patent reform; technology-to-market success stories and their best practices; tech transfer pitfalls in legacy agreements; and "The Great Debate: 'Research for Research's Sake' vs. 'Research for Innovation/Jobs' Sake.'" The meeting also boasted a keynote address by NASA astronaut Donald R. Pettit who, in addition to being a veteran of three space flights, was previously a staff scientist at Los Alamos National Laboratory. As a scientist and inventor holding several patents on innovations from the laboratory to outer space and from the laboratory to the marketplace, Pettit brought a unique perspective on technology transfer to the attendees.



Strategic Activities

In FY12, the FLC Executive Board established four goals for all FLC activities:

- Outreach/communication
- Training/education
- Networking
- Recognition.

PLANNING & POLICY

The FLC's Planning and Policy (P&P) Committee provides the framework for the FLC to perform its function for members. The Committee's activities during FY12 included maintenance of the FLC's Strategic Plans and Bylaws, as well as the building and maintenance of strategic relationships. This strategic planning, under the guidance of the P&P Committee, brings unified focus to all of the FLC's activities in order to accomplish targeted results.

In accordance with its charge, when the Communications Committee established the new videoconferencing program, the P&P Committee reviewed the FLC Bylaws and policies to determine whether any changes were needed. The committee concluded that the Bylaws must be amended in order to hold valid Executive Board meetings via videoconference. During May and June, the P&P Committee released this recommendation, proposed amendments to the Bylaws, and organized a membership vote to ratify the change.

The P&P Committee also develops and manages formal relationships between the FLC and likeminded organizations through Memoranda of Understanding (MOUs). This includes evaluating existing relationships and leveraging the FLC's network to identify additional organizations with which to explore relationships. At the crux of these relationships are opportunities to co-market to each other's membership—enabling information exchange, educating potential partners about technology transfer, and facilitating collaboration at the lab level, as appropriate. In FY12, the FLC maintained MOUs with:

- Association of University Research Parks (AURP)
- International Society of Optical Engineering (SPIE)
- Licensing Executives Society (USA and Canada)
- Maryland Technology Development Corporation (TEDCO)
- National Association of Seed and Venture Funds (NASVF).

LEGAL ISSUES

The Legal Issues Committee worked to respond to changes to the tech transfer environment as a result of recent law and policy developments. For example, throughout FY12 the Legal Issues Committee identified

best practices under the America Invents Act, which significantly altered aspects of protecting inventions. The committee disseminated these best practices through the FLC network and served as an AIA resource for FLC constituents.

The committee chair responded to a number of legal inquiries regarding tech transfer, including assisting the White House Office of Technology Policy with a question about the government's "march-in" rights under the Bayh-Dole Act. In the course of regular activities, the Legal Issues Chair also reviewed MOUs drafted by the P&P Committee, began a review of the laws and provisions covered in *Federal Technology Transfer Legislation and Policy* ("The Green Book") in light of the AIA, conducted legal research on technology transfer and FLC issues, and shared legal information with other technology transfer networks.

EXECUTIVE BOARD

The Executive Board meets quarterly to prioritize and make decisions about the FLC's activities, budget, programs, and plans. To save money and accommodate increased travel restrictions, the Board implemented a new videoconferencing system as a method of participating, with an average of about one-third of all Board members now participating virtually. In early 2012, the Board conducted a strategy exercise to determine the FLC's priorities in the coming years. "Red" and "blue" teams worked independently to develop their opinions of the FLC's most important goals, and then collaborated on a final result to develop the FLC's four goals (mentioned above) for the next few years.

In 2012, the Consortium's membership elected a new Recording Secretary, Finance Officer, three Members-at-Large, and regional officers for the Midwest, Mid-Atlantic, and Far West regions. Terms for these new Board members commenced at the start of FY13. In 2013, a new Chair, Vice-Chair, three Members-at-Large, and regional officers for the Mid-Continent, Northeast, and Southeast Regions would be elected to begin their terms as FY14 begins. In addition, a special vote was conducted to replace a vacant position in the Mid-Atlantic Region.

NATIONAL ADVISORY COUNCIL

The National Advisory Council (NAC) seeks to increase the interaction of industry and industry groups with the FLC and its members, and to expand awareness of federal technology transfer to a broad cross-section of organizations. In 2012, the NAC used its extensive network and industry background to survey industry perceptions of working with laboratories. Distributed through the WBT Innovation Marketplace, the survey addressed industry members' experience and familiarity with the federal laboratory system, their satisfaction with the technology transfer process, the features they viewed as impediments to working with the labs, and recommendations to improve the process.

Further, to foster collaboration with industry, the NAC partnered with the Industrial Research Institute's (IRI) External Technology Network to develop lists of industry technology needs for use by the federal laboratories. The NAC also explored opportunities to bring in potential industry partners and increase its virtual interaction with member laboratories as travel budgets decrease for 2013.

In addition, the national advisors provide support and guide actions on behalf of and as a part of committee efforts. Their activities contribute to tasks such as the Laboratory Director of the Year Award, Industry Day at national meetings, outreach activities, and efforts to facilitate collaboration between labs and potential partners. Each committee has an "assigned" national advisor. National advisors' strategic, informal relationships with organizations like IRI, Carnegie Mellon University, and the National Science Foundation's SBIR Advisory Committee expand the reach of the FLC and help secure collaboration on FLC activities.

2012 Financial Statement

FUNDING

By statute (15 USC §3710(e)(6)), the FLC receives its funding as a stated percentage of the intramural research and development budget of each federal agency in the fiscal year. These funds are transferred to the National Institute of Standards and Technology at the beginning of each fiscal year involved and then transferred by NIST to the FLC for purposes of carrying out its activities.

Below is a summary schedule of revenue and disbursements of the FLC as reported on the ledgers from NIST, as well as a summary of the agency contributions in FY12.

FINANCIAL STATEMENT

Schedule of Revenues and Disbursements for Fiscal Years 2011 - 2012

	2011	2012
Revenue	**$2,675,068**	**$2,310,880**
Disbursements*		
Contract Support	$1,503,300	$1,207,435
NIST Administrative Charges	$150,198	$191,635
Committee/Operations	$1,021,570	$911,810
Total Disbursements	**$2,675,068**	**$2,310,880**

*Disbursements are made across fiscal years.

AGENCY CONTRIBUTIONS TO THE FLC FOR FISCAL YEAR 2012

Agency	Amount Paid
Department of Agriculture	$132,037
Department of Commerce	$87,960
Department of Defense	$1,728,768
Department of Energy	$488,000
Department of Health and Human Services	$553,920
Department of Homeland Security	$34,608
Department of Interior	$52,208
Department of Justice	$0
Department of Labor	$0
Department of Transportation	$23,144
Department of Veterans Affairs	$47,200
Environmental Protection Agency	$33,968
National Aeronautics and Space Administration	$160,920
National Science Foundation	$29,568
Total	**$3,372,301**

FLC Organization

The Consortium membership is comprised of the federal laboratories, each of which is represented by **Agency Representatives** (ARs) and **Laboratory Representatives** (LRs).

ARs are senior representatives appointed by each parent federal agency that typically has more than one member laboratory in the FLC. ARs represent the high-level interests of their parent federal agencies, and serve as institutional links between the Consortium and their respective agencies. They coordinate with the federal laboratories that are within their agency's jurisdiction, assist and advise the Consortium leadership with maintaining relevance to changing agency missions/priorities, and support the accomplishment of the FLC's mandates.

LRs are federal laboratory staff members appointed by each federal laboratory that is a member of the Consortium. LRs serve as the primary link between the FLC and their laboratory. They represent their laboratory regarding technology transfer and related activities, and assist the FLC with servicing requests for technical assistance.

ARs and LRs cast votes in FLC national and regional elections, in addition to voting on changes to Consortium bylaws, policies, and procedures.

To best serve its large and geographically diverse membership, and most effectively administer its affairs and services, the FLC is organized into 6 **regional subdivisions**: Far West, Midwest, Mid-Atlantic, Mid-Continent, Northeast, and Southeast. Each Consortium member laboratory is a member of the region in which it is located. Regional Coordinators (RCs) and Deputy Regional Coordinators (DRCs) are elected by the voting members of each region to carry out its affairs.

The **Executive Board** is the FLC's governing body. It comprises elected positions—FLC Chair, Vice-Chair, Finance Officer, Recording Secretary, and six Members-at-Large at the national level; and the six elected Regional Coordinators—in addition to the chairs of standing committees, a Host Agency Representative, and the DC Liaison. The FLC Executive Board determines policy and direction, and establishes the annual budget.

Much of the work of the Consortium is planned and carried out by **committees**. The chairs of standing committees are selected and appointed by the Executive Board, and represent their committees' activities to the Executive Board (see next page).

The Executive Board is advised by the National Advisory Council (NAC), which includes advisors from the FLC's user communities, i.e., industry, academia, state and local governments, and federal laboratories. The Advisors provide the FLC with user community views. A major function of the Council is to increase the interaction of industry and industry groups with the FLC and its members. The NAC Chair serves as an ad hoc member of the Executive Board, as does the FLC's DC Liaison.

STANDING COMMITTEES

- **Awards Committee**—Administers the national awards that recognize outstanding technology transfer achievements. By recognizing success and ingenuity in technology transfer, the Awards Committee encourages technology transfer by raising its profile, adding prestige, and providing positive reinforcement.
- **Communications Committee**—Integrates, coordinates, and initiates activities that market the services of the FLC and its members. These include print and digital media, marketing plans, websites, news, social and new media, and outreach through trade shows and cross-promotions.
- **Education and Training (E&T) Committee**—Implements and oversees activities that ensure the awareness and availability of the FLC's technology and technical assistance resources to the benefit of educational institutions at all levels. The E&T Committee is responsible for planning, designing, and implementing all FLC training programs and resources.
- **Legal Issues Committee**—Provides a forum for Consortium members to discuss legal concerns in the conduct of effective technology transfer programs; deals with legal issues concerning the Consortium; reviews existing and new technology transfer statutes, legislation and concerns; and disseminates information and rulings regarding federal intellectual property law.
- **Planning and Policy (P&P) Committee**—Makes recommendations regarding FLC plans, goals, policies, and positions; reviews the FLC's Bylaws and procedures to recommend any changes; and manages formal relationships between the FLC and likeminded organizations. The P&P Committee is led by the elected FLC Vice-Chair.
- **Program Committee**—Develops, plans, and executes Consortium meetings, seminars, and programs at the national level, in particular the annual national meeting.
- **State and Local Government (S&LG) Committee**—Ensures that state and local government organizations are aware of the benefits available to them and their regions through technology transfer partnerships with federal laboratories, thus enabling successful collaborations—and economic benefits, improved quality of life, and a safer future for the citizens in these geographic regions as well as the entire nation.

FLC Executive Board (effective Oct. 1, 2013)

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