

The COMET® Program Strategic Plan 2014-2019

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Authors: Dr. Rich Jeffries
Dr. Greg Byrd
Ms. Wendy Abshire
Ms. Elizabeth Lessard
Mr. Tim Alberta
Mr. Bruce Muller
Dr. Elizabeth Page

History of COMET

The COMET® Program was established in 1989 by UCAR and NOAA's NWS to promote a better understanding of mesoscale meteorology among weather forecasters and to maximize the benefits of new weather technologies during the NWS's modernization program. The COMET mission has expanded, and today COMET uses innovative methods to disseminate and enhance scientific knowledge in the environmental sciences, particularly meteorology, but also including diverse areas such as oceanography, hydrology, space weather and emergency management.

COMET has an outstanding, talented team of instructional designers, meteorologists, environmental scientists, graphic artists, multimedia developers, and information technology and administrative professionals. COMET's strength is the flexibility of its staff, which allows effective use of program funds and efficient production.

Mission Statement

COMET serves the international geoscience community through the translation of emerging geoscience knowledge and competencies into education and training for society.

The COMET Program creates environmental science education and training in support of a diverse community of users by offering the following products and services:

- Media-rich, interactive, multi-lingual distance learning
- Internet-based synchronous and asynchronous courses
- The MetEd website with a user tracking and assessment system
- Residence courses, workshops, and meetings
- Small grants program (Outreach)
- Leadership and consultation in science education and training

COMET Stakeholders and Customers

Any individual or group who has a vested interest in the outcome of the COMET body of work or organizations who fund the COMET body of work.

- **COMET Key stakeholder:** any stakeholder with significant influence on or significantly impacted by the COMET work and where these interests and influence must be recognized if the COMET work is to be successful.
- **COMET Clients:** people who use COMET programs, products and services. Clients should be included in COMET's key stakeholder grid as a major category of stakeholders. Direct clients of COMETs are those receiving COMET services directly e.g. partners, new customer or member agencies and funding bodies such as Department of Commerce. Indirect clients of COMETs are those users of COMET partner capabilities, new customer or member services or other population/community groups that are indirectly affected by COMET products or services such as university faculty and students.

COMET Collaborators

National and international science-based organizations, environmental professionals, and members of the education community who provide scientific content and partner with COMET to meet our customers' requirements comprise the community identified as COMET Collaborators.

COMET Consumers

COMET has a large and diverse global audience of consumers. With over 300,000 users in over 195+ countries with 5000 new user registrations per month and over 1600 universities who routinely utilize MetEd, COMET is an international training resource for the geosciences.

COMET Operating Environment

For over 23 years, COMET has been the premier organization for the development of online environmental education and training materials COMET's staff remains at the technological and instructional forefront of developing effective online learning for the geosciences. Primarily, COMET is challenged by a high salary, aging workforce, and the growing capacity of universities and private companies to produce multimedia in-house and at a low cost. The key niche that COMET continues to hold is the use of professional instructional designers to create the educational materials of highest quality and effectiveness.

COMET Strategic Challenges

Business Development Challenges

Historically, business development and funding to support COMET have come from interactions focused on the United States Federal Government sector. Sequestration and the impacts of reductions at the National Science Foundation and NOAA have reduced the funding sources available to support COMET by more than 20% over the past two years. New development activities with NOAA's National Ocean Service, the Department of Interior Bureau of Reclamation, state and public water agencies and the Army Corp of Engineers focused on coastal inundation, surveying, water resource management and climate change are providing some new revenue. Ongoing relationships with Environment Canada are expanding and are providing new revenue to support COMET.

Further expansion of business development with private sector partners is required to restore the 20% in revenues required to restore COMET to the 2010 funding levels. Because of the volatility of the funding flow associated with the current federal fiscal picture, COMET must develop a new staffing model. COMET will limit the growth in core staff to 24 and use casual and temporary workers to meet personnel demands while shifting our business development activities toward revenues streams that are balanced toward a 60% government (core staff) and 40% private sector mix (temporary, student and casual staff).

Financial Challenges

This section provides a review of the number of personnel assigned at the beginning of FY13 and the adjustments made or planned by the end of FY13. COMET began the year projecting a \$5.2M program and it appears that the program will end the year at approximately \$4.9M expended toward projects. A carryover of approximately \$357K is projected and the shortfall is expected to be approximately \$325k. In FY14 the COMET program is expected to be a \$4.2M program. These combined shortfalls and budget reductions required a 7 person reduction to the full time staff to balance the budget. By FY20 COMET is expected to grow to a \$6M program. Increased use of casual and temporary employees will be used to cover the additional manpower requirements for the capacity needs of a \$6M program.

Outputs and Services in FY13

In FY13, COMET will have:

- Published approximately 50 hours of English-language online material
- Translated nearly 50 content hours into Spanish and French
- Delivered three residence courses, for a total of four weeks of classes
- Delivered two virtual courses and supported a virtual offering of Satellite Science Week as well as the Environmental Satellite Resource Center (ESRC)
- Supported two facilitated distance learning courses in hydrology to 51 participants from 11 African countries and 31 participants from 12 Asian countries.

The MetEd website has now reached over 300,000 registered users. In FY13, over 57,000 new users registered on the site. In addition:

- MetEd hardware was upgraded to streamline server and database operations
- Uptime for MetEd remained above 99.95%
- 24/7 user support was maintained
- A disaster recovery/business continuity solution was installed on a UCAR campus different from the location of the MetEd hardware

Functionality and usability of the MetEd website continued to be enhanced and updated to support its sponsors and other users. FY13 achievements and FY14 planned activities are highlighted by topic area throughout the rest of this plan.

10-year Vision

In 2024, COMET will continue to be a highly respected, worldwide leader in support of education and training for the environmental sciences, delivering scientifically relevant and instructionally progressive products and services. COMET will be a major contributor to the WMO Global Campus learning program and will be the world leader in providing continuing education unit credits and competency development training and education for the geosciences.

Workforce Vision 2014-2019

Between 2014 and 2020, COMET will restructure their products and services to provide 60% of production to traditional and new government partners and 40% of production to new commercial partners. The \$4.3M program in 2014 will grow to a \$6-7M program by 2019. The products and services will expand to include cost reimbursable courses, partnerships with UCAR and international universities in the delivery of distance learning course content, fee for service instructional design and multi-media services, and proprietary learning content for our private partner organizations. Every project will be administered using formal Earned Value Management System project management processes and we will constantly evaluate processes for improvement utilizing metrics designed to reduce costs while maintaining the current quality standards for scientific instruction. COMET will invest in developing the business and project management skills of our workforce and will focus on integrating more student assistants to help in our transition to interactive multi-media delivery services tailored to the Millennial Generation learning styles required by the next generation of learners. We will continue to expand our services to the international community focused on developing professional learning centers and services in emerging nations. COMET will continue to lead the world in professional distance learning processes and content design.

COMET Capabilities

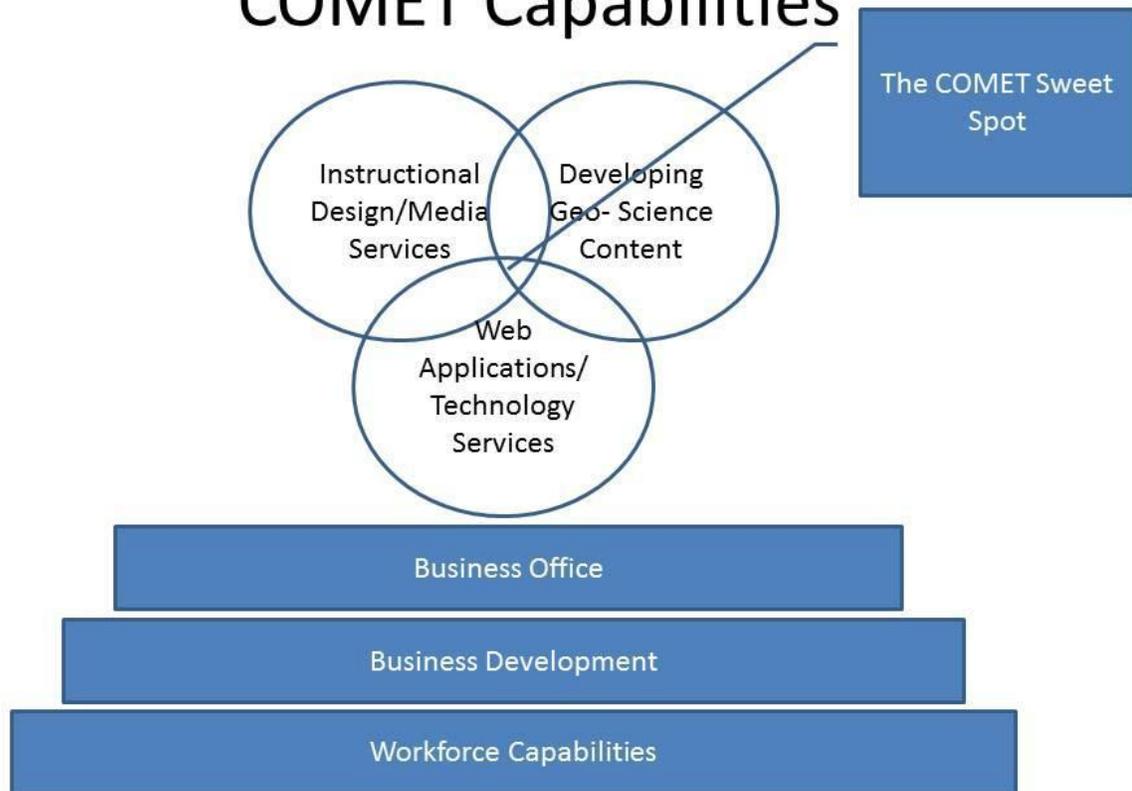


Figure 1: The COMET capabilities Venn diagram

Core Organizational Capabilities (current and future)

Within the geoscience community, distance learning and instructional design are what COMET is the best at in the world. The staff is passionate about and skilled at converting geoscience content into learning materials and the key resource engine is associated with COMET's expert information technology and software engineering staff that uses state of the art technologies to keep MetEd and the "virtual classroom" at the forefront of the distance education community. The COMET graphics and animation capabilities lead the distance learning sector in development of meaningful geoscience content and concepts that enhance online learning in both self-paced and instructor lead venues. Maximum or optimal performance at COMET occurs when sponsors utilize COMET instructional designers to design geoscience learning experiences that produce learning outcomes conducted in a distance learning environment that are hosted on the COMET MetEd or virtual classroom environment. In these situations, the capabilities are leveraged to produce state of the art geoscience learning experiences (Figure 1). To maximize the occurrences of projects that leverage the full capabilities of COMET, requires maintenance and upgrade of the workforce skills, expanded business development efforts into new

private and public sectors in the geosciences and improved processes within the business office to put new types of funding vehicles in place to maintain adequate resources to support the growth and expansion of the COMET program.

Organizational Purpose

- **Core Values:** Provide a quality learning experience based on sound science
- **Customers:** National and international science-based organizations, environmental professionals, educational community, and the public
- **Products/Services:**
 - Media-rich interactive distance learning (multi-lingual)
 - Web-based synchronous courses
 - MetEd and the user tracking and assessment system
 - Residence courses, workshops, and meetings
 - Small grants program (Outreach)
 - Leadership and consultation in science education and training
 - Instructional Design Consulting and Media and Production Services
 - Hosting and Facilitation of online workshops and distance learning events.
- **Value Proposition:** COMET offers comprehensive, cost-effective solutions to a broad range of educational and training needs:
 - Access to a wide range of experts
 - Access to a large library of content and media resources covering a broad range of topics and tools
 - Diverse in-house skill sets (science, graphics, programming, instructional design, etc.)
 - Large and diverse global audience
 - State of the Art IT capabilities and services.

Context for the Plan

The rapid evolution of science and technology continues to challenge those in the environmental sciences community to maintain up-to-date scientific knowledge. Sound scientific and technical knowledge is needed to issue accurate and effective warnings and forecasts, and to perform long-range planning for the protection and economic benefit of society. Additionally, many atmospheric scientists, the core audience for COMET materials, are being asked to assume roles that require broader interdisciplinary knowledge of the environmental sciences. As a result, COMET sponsors need new and continually more diverse training to ensure that their professional workforce and user communities can operate efficiently and effectively.

The academic community, too, must be responsive to these changes in preparing students to enter scientific professions. In the face of these changes, COMET and its partners must continue to be proactive in identifying evolving education and training needs, and in developing and delivering relevant, cost-effective training. To achieve this, COMET must

also leverage other substantial education and training programs existing within UCAR and our sponsor community.

Strategic Plan

The basis of the COMET 2014-2019 Strategic Plan is the continued achievement of sponsor goals by delivering high-quality environmental science education and training to the global community. To do so, COMET will need to be nimble and innovative. There will be increasing competition from other groups able to produce multimedia instruction, and at the same time increased expectations for high-end media. Given constrained sponsor budgets, COMET must therefore work toward even greater efficiency without sacrificing the quality of its products and services. Increased accountability for funding received means we must also find new ways to measure the benefit of our products to end users to justify costs. We expect that the general trend in the next 5 years will be toward an increased demand for customized solutions and an expectation for facilitated learning experiences, delivered via an increasingly diverse set of platforms and technologies. Similarly, we anticipate a continued expansion of our user community, including greater engagement of universities and international users in addition to a broadening audience of professionals in the environmental sciences. With these changes in mind, our strategic goals center on four major areas:

- Delivering sound, relevant environmental science education and training that meets sponsor and user needs
- Developing innovative and cost-effective products and services
- Nurturing existing alliances and developing new relationships to enable COMET partners in reaching their goals
- Ensuring program stability to provide a firm foundation for the decades to come

Assumptions for the Future

- More competition—more groups able to produce quality distance learning
- Tighter budgets and accountability
- Continued need to broaden our content areas and audience
- Higher expectations for high-end media
- More facilitated learning experiences
- Greater demand for customized solutions
- Change in internal leadership
- Staff skill sets will evolve with changing demands for products/services
- More diverse instructional delivery platforms and devices
- WMO will implement a global campus that utilizes shared DL content hosted in a common framework.

Major Changes

1. Expansion of international program
2. Greater engagement of university users
3. Broadening of the user community
4. Broader range of topics
5. New private sector sponsors
6. New cost model for university support

COMET Strategic Goals

Science

Goal 1.0: Develop and deliver sound, relevant environmental science education and training that meets the needs of our sponsors and users.

1. Develop and maintain internal expertise to ensure sound science content.
2. Foster productive relationships with external experts to ensure sound science content.
3. Offer continuing education for professionals.
4. Provide support for educators in their efforts to prepare students for careers in operational and applied settings.
5. Increase the general public environmental science literacy.
6. Expand the scope of educational offerings on environmental issues.
7. Develop training materials on the use of environmental data to aid decision making (e.g., expand training opportunities for first responders and other emergency personnel).
8. Seek opportunities to work with sponsors to measure the benefit of our products to end users.
9. Development of expertise working with private sector scientific training needs.

Instruction and Technology

Goal 2.0: Develop and deliver innovative and cost-effective products and services.

1. Produce and deliver quality asynchronous distance education.
2. Conduct residence and virtual courses for learning situations that require direct experience and engagement with experts.
3. Expand blended learning opportunities.
4. Apply the latest in educational theory and technology to structure, manage, and distribute materials using a variety of methods (e.g., custom simulations, smart readiness) and platforms (e.g., expand usability of training modules for mobile devices).

5. Adapt IT infrastructure and system capabilities to ensure reliable delivery of an expanded suite of products and services.
6. Provide consulting services for other sponsor training needs (e.g., competency-based training systems such as the Professional Development Series and implementation curriculum based on needs analysis).
7. Expand Instructional Design consulting services for utilization by member universities, UCAR and the private sector.
8. Develop capability for searchable video segments that provide short topic lessons for utilization by member universities, UCAR, Sponsor Organizations and the international geoscience community.

Relationships and Audience

Goal 3.0: Nurture existing alliances and develop new relationships to assist COMET partners in achieving their goals.

1. Maintain and strengthen relationships with national and international organizations with responsibilities in relevant fields.
2. Investigate improved strategies for science transfer to reduce the time it takes for important research findings to reach users and decision makers.
3. Develop new methods and strategies to support university instruction. (e.g., develop a core set of dynamic meteorology learning objects).
4. Expand support to WMO through mapping of content to WMO competencies and providing training content to the WMO Global Campus.
5. Develop stronger connections with the private sector to strengthen the U.S. weather and climate enterprise.
6. Collaborate with UCAR education groups to increase public environmental science literacy.

Business Development/Sponsorship/Private Partnerships

Goal 4.0: Ensure program stability.

1. Respond to evolving sponsor needs (e.g., continue to expand opportunities to provide training in climate science, Arctic regions).
2. Expand the breadth of our funding base to include private sector partners.
3. Maintain a diverse and flexible workforce.
4. Ensure a productive and supportive work environment.

COMET Talent Management/Workforce Development

Goal 5.0: Upgrade workforce skills.

1. Develop top quality talent pools to recruit temporary workers and fill vacancies on staff.

2. Develop a Talent Management and Succession Strategy to enable viable transition to a public and private sponsor model and organizational knowledge management upon retirement or departure of current staff.
3. Develop a temporary, student and casual workforce pool to support the 60% core and 40% surge staffing model.
4. Develop a workforce competency model to identify core competencies and identify resources to close competency gaps for core staff.
5. Develop formal project and program management competency within the workforce.