

2011

UR  
LLE

40  
YEARS OF EXCELLENCE

YEARS OF EXCELLENCE

1970 - 2010

**Moshe J. Lubin**  
*LLE Founding Director, 1970-1981*

**ZETA Laser**  
1978

**Robert L. Sproull**  
*University of Rochester  
President Emeritus*

**OMEGA EP Laser**  
2008

**Robert L. McCrory**  
*LLE Director, 1983-Present*

**Omega Laser Facility**  
2008

**Donald K. Hess**  
*University of Rochester  
Vice President Emeritus*

**OMEGA 60-Beam Laser**  
1995

**Jay M. Eastman**  
*LLE Director, 1981-1982*

**OMEGA 24-Beam Laser**  
1980

# LABORATORY *for* LASER ENERGETICS

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# Membranes that Respond to Light

LLE devised and fabricated a unique type of membrane that changes its permeability to gas merely by shining light onto its surface. Tiny micropores filled with light-sensitive liquid crystals change their molecular arrangement under certain illumination conditions.

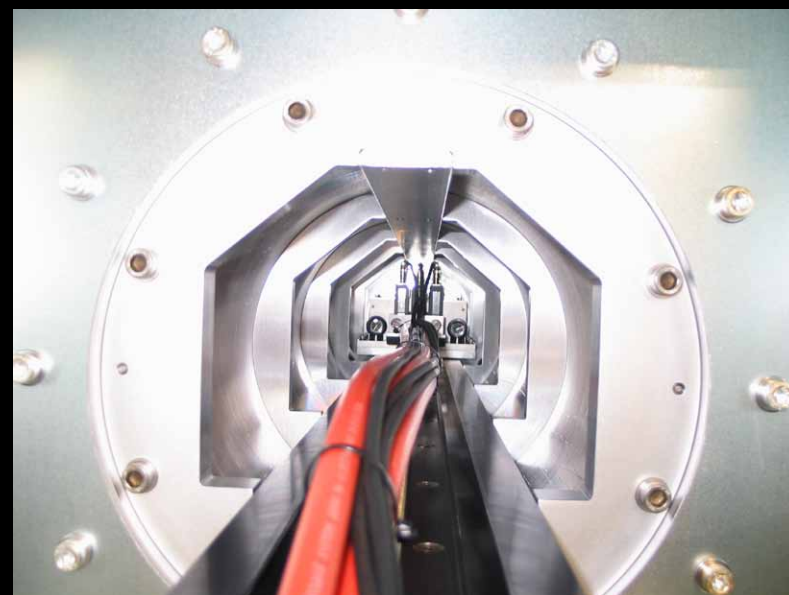
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# JANUARY

2011



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# Bang-Time Detector

The south pole bang-time detector for the National Ignition Facility. Diamond x-ray detectors and graphite crystal mirrors are enclosed by a Hevimet housing completely fabricated at LLE.

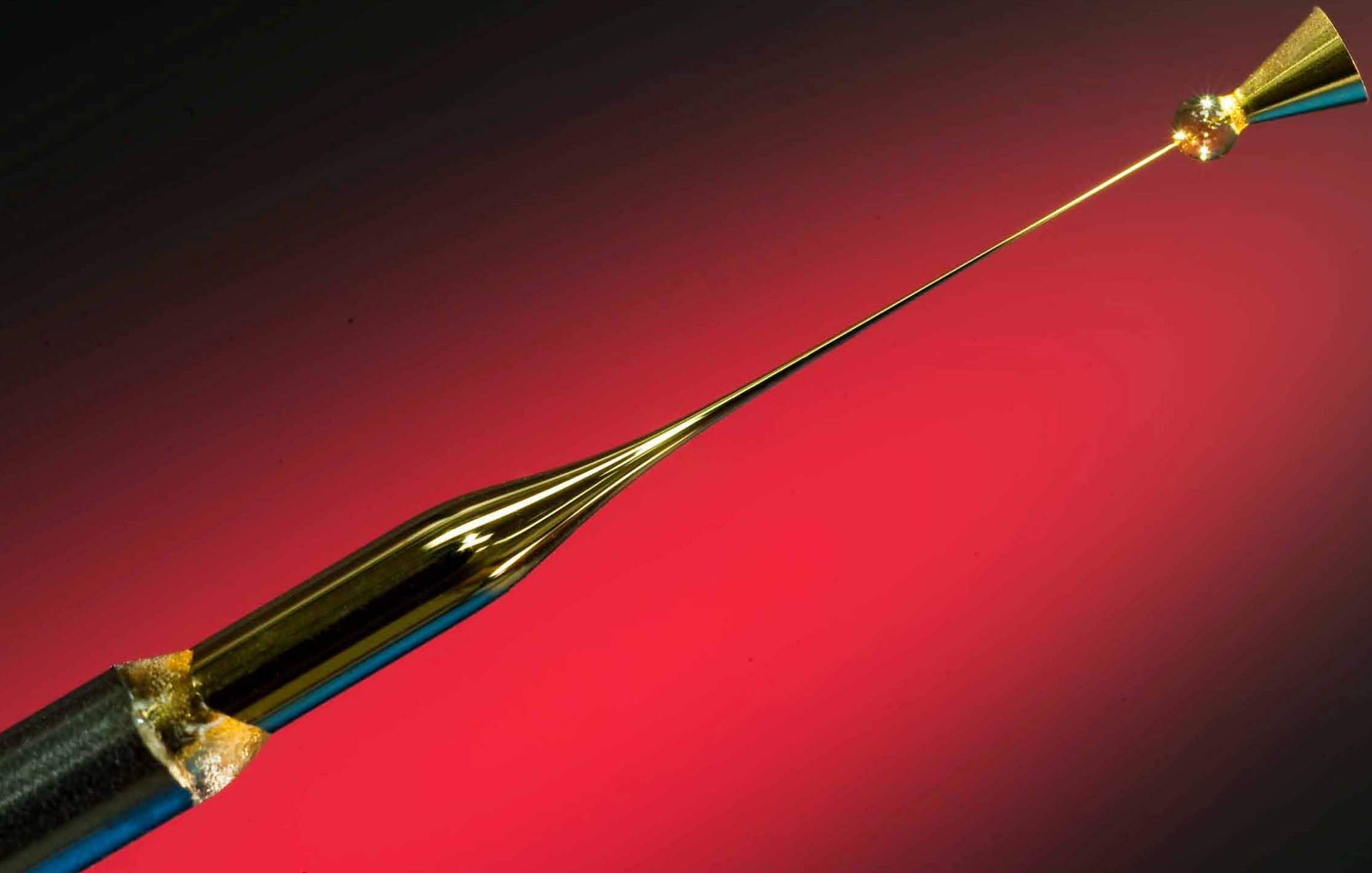
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# FEBRUARY

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# Cryogenic Fill-Tube Target

A polymer target with an embedded gold cone is filled with liquid D<sub>2</sub> via a thin support tube connected to a fuel reservoir (left). The target will be studied in the Cryogenic Fill-Tube Target Facility.

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# MARCH

2011

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# Magnetic Recoil Spectrometer

The magnetic recoil spectrometer (MRS)—a collaborative LLE/MIT project—will be used at the National Ignition Facility to measure the fusion neutron spectrum in the energy range of 6 to 32 MeV.

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# APRIL

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# Moving Cryostat

Polished gold-coated components that provide superior thermal performance at cryogenic temperatures are assembled into a second-generation moving cryostat.

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# MAY

2011



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# NIF Polar DIM Imager

The polar diagnostic instrument manipulator (DIM) imager was built at LLE and delivered to the National Ignition Facility (NIF). The DIM imager provides a platform for simultaneously fielding five implosion diagnostics.

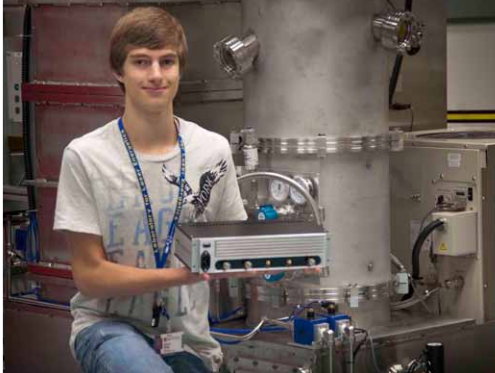
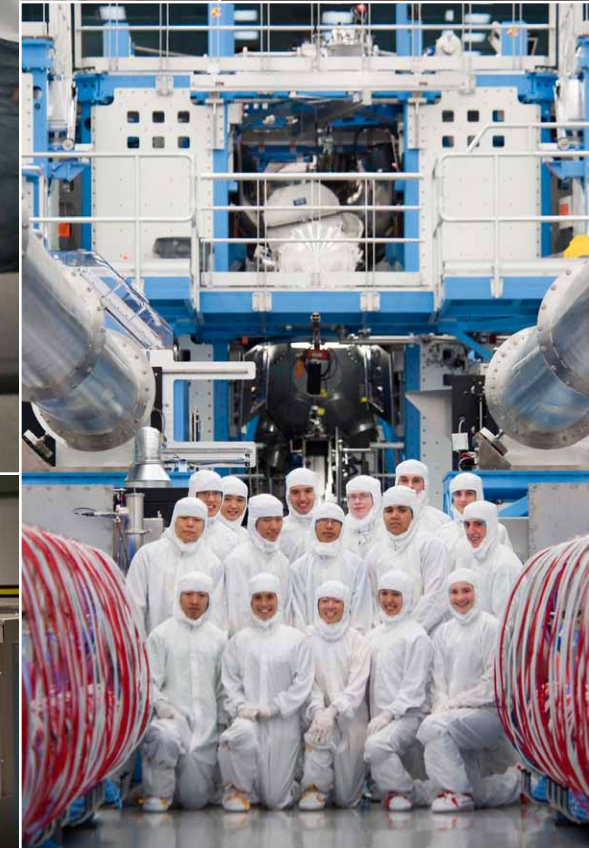
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# JUNE

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# High School Program

Participants in LLE's 21st Summer High School Research Program with program director Dr. Stephen Craxton. The program challenges high school students to explore research topics and careers under the tutelage of LLE scientists, engineers, and staff in a state-of-the-art environment.

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# JULY

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## Tiled-Grating Assembly

A tiled-grating assembly (TGA) was prepared for the installation of new grating tiles. In an effort to improve the energy performance of OMEGA EP, all four TGA's in the upper compressor were outfitted with new grating tiles.

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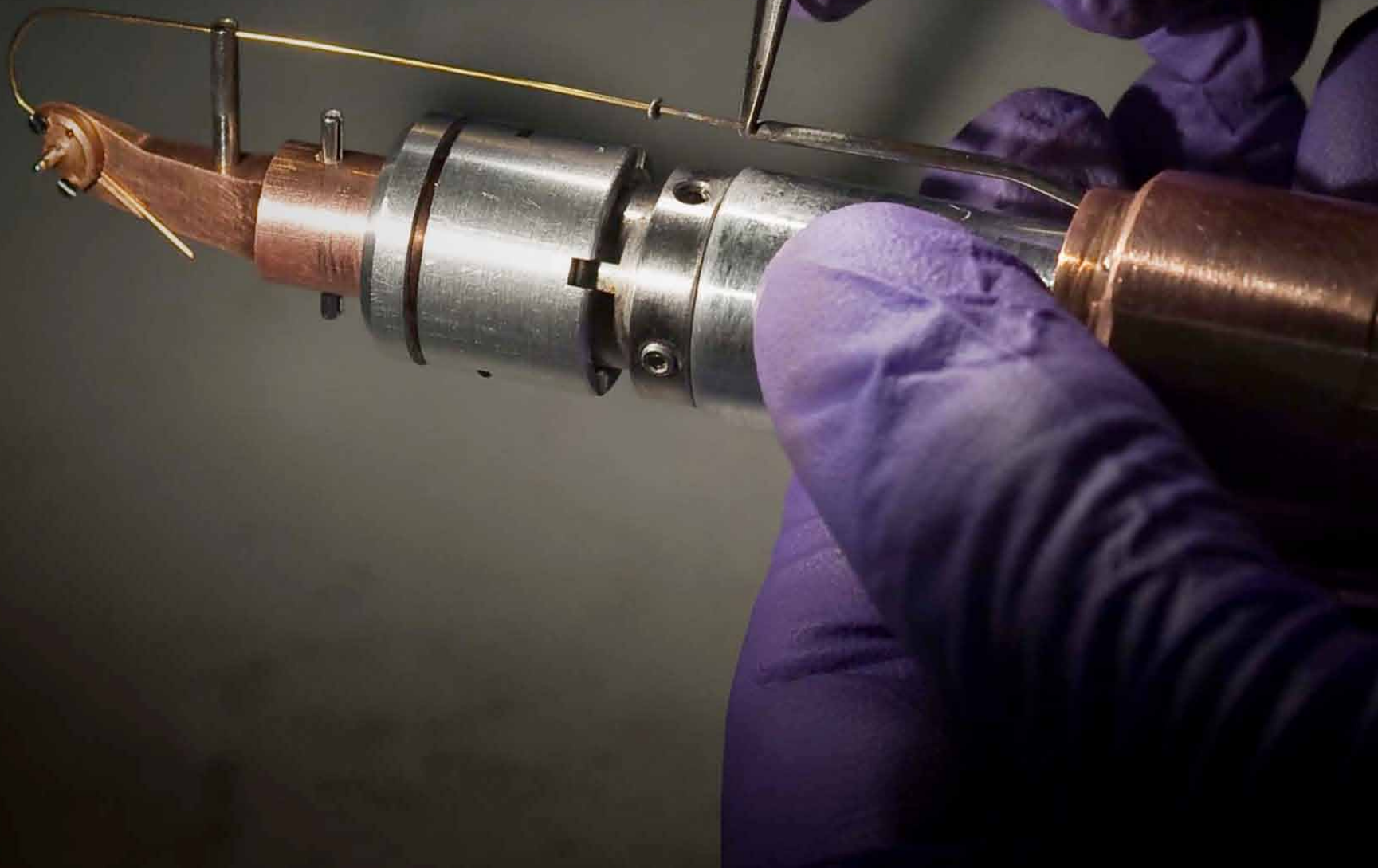
LLE GOLF TOURNAMENT  
AT MILL CREEK



# AUGUST

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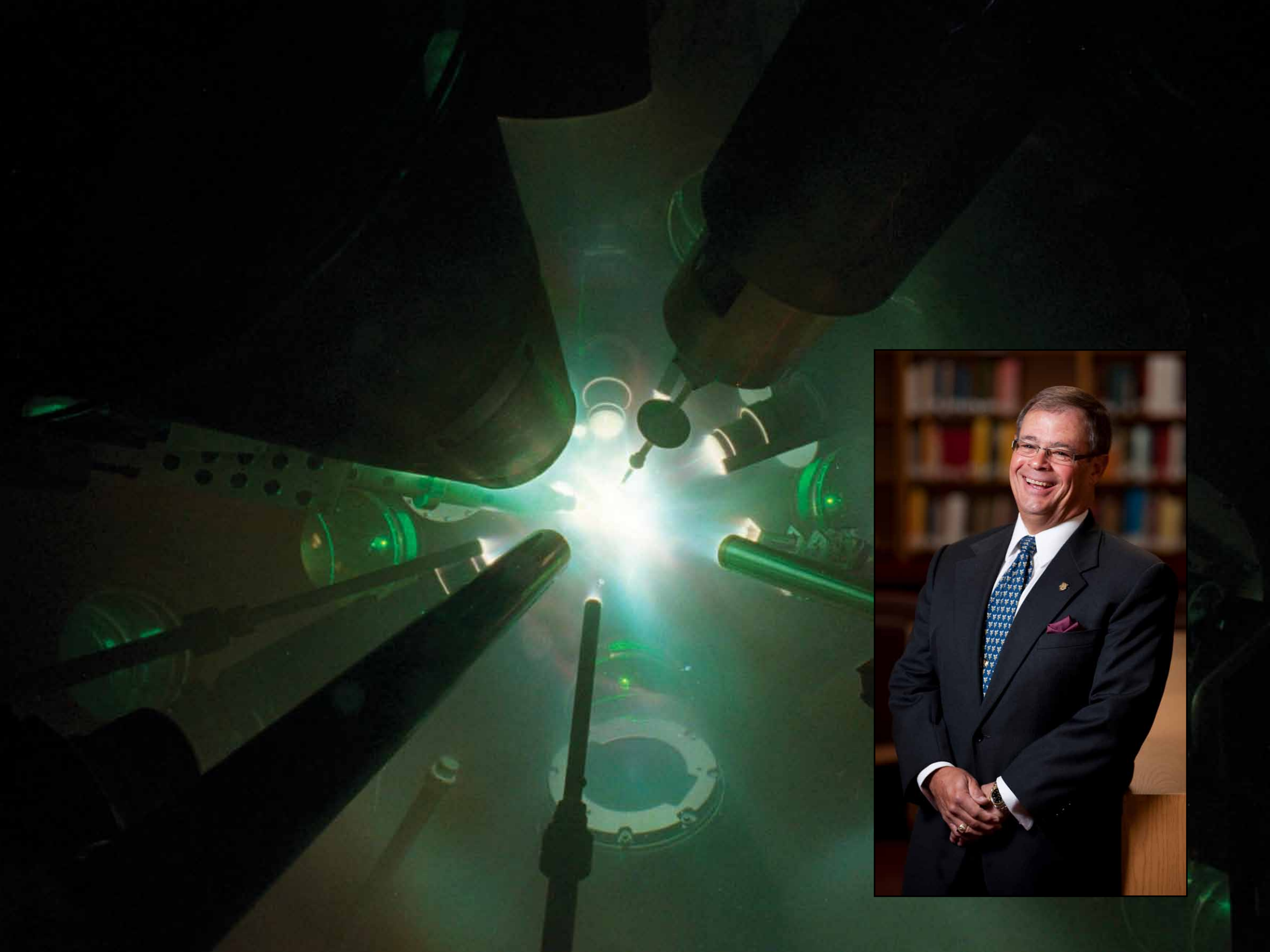



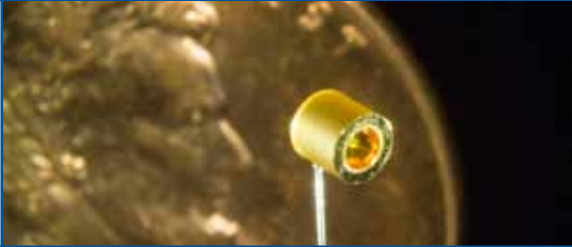


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# SEPTEMBER

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# OCTOBER

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# Hoppe Glass Targets

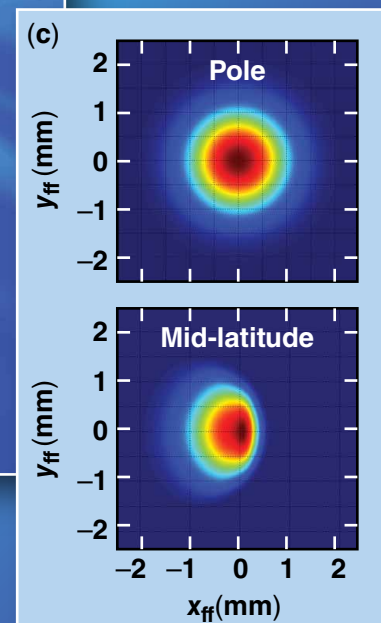
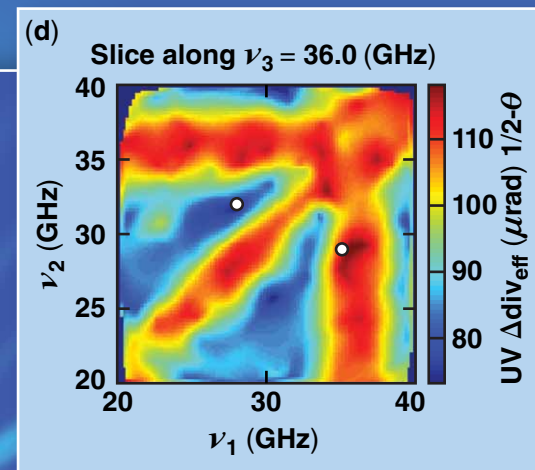
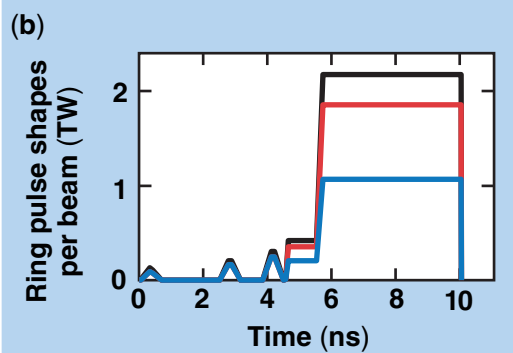
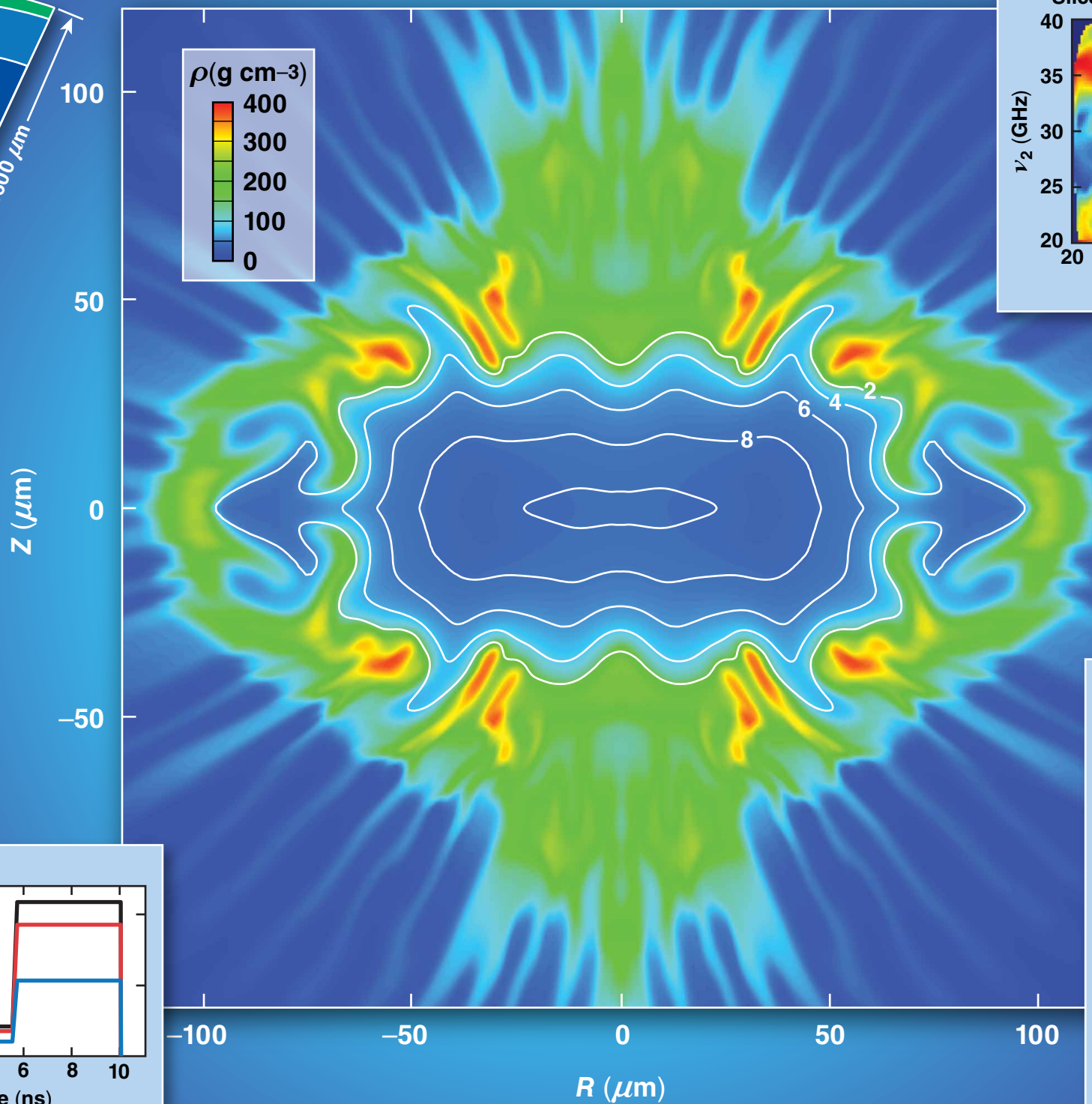
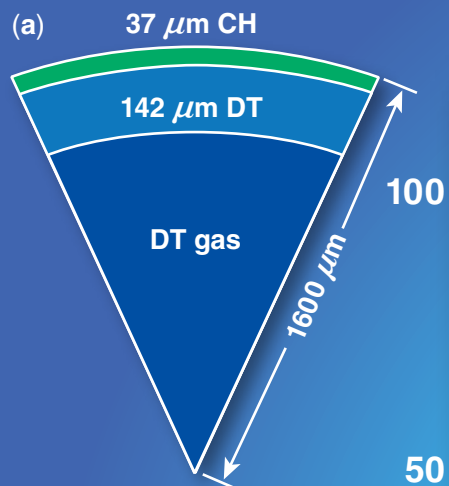
LLE developed a technique to fill “Hoppe” glass targets with deuterium–tritium fuel for the National Ignition Facility. Above, operators mount targets in the Target Mounting Station. A gas-filled, Hoppe glass target is shown in the inset.

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# NOVEMBER 2011

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<p>NOVEMBER</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> <tr><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					<p>JANUARY 2012</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr> <tr><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr> <tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr> <tr><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					1	2	3
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# DECEMBER

2011

# Mission Statement

The Laboratory for Laser Energetics (LLE) of the University of Rochester is a unique national resource for research and education in science and technology. The Rochester area has a history of innovation and provides a unique setting for LLE within a technologically sophisticated community. Established in 1970 as a center for the investigation of the interaction of intense radiation with matter, the Laboratory has a five-fold mission:

1. to conduct implosion experiments and basic physics experiments in support of the National Inertial Confinement Fusion (ICF) Program;
2. to develop new laser and materials technologies;
3. to provide graduate and undergraduate education in electro-optics, high-power lasers, high-energy-density physics, plasma physics, and nuclear fusion technology;
4. to operate the National Laser Users' Facility (NLUF); and
5. to conduct research and development in advanced technology related to high-energy-density phenomena.

The 2011 LLE Calendar contains information about many of the Laboratory's programs. We hope that you enjoy using your copy of the LLE Calendar and wish you a productive and fulfilling 2011.



LABORATORY  
for  
LASER ENERGETICS  
UNIVERSITY of ROCHESTER  
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# 2011

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# 2012

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