1. **The list of courses taught and the overall teacher evaluation rating for each course:**

   Usually, I am teaching undergraduate physics for large groups of 70-80 students and nanotechnology engineering for 25-28 grad students with overall average evaluation of 3.73 which is well above engineering average 3.55 (look below):

<table>
<thead>
<tr>
<th>Course</th>
<th>Term</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS210</td>
<td>Wint 2010</td>
<td>3.7</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Wint 10</td>
<td>n/a</td>
</tr>
<tr>
<td>ENGR657</td>
<td>Wint 10</td>
<td>n/a</td>
</tr>
<tr>
<td>MSNT506/Chem450</td>
<td>Spr10</td>
<td>4.0/3.8</td>
</tr>
<tr>
<td>PHYS209</td>
<td>Fall 10</td>
<td>3.7</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Fall10</td>
<td>n/a</td>
</tr>
<tr>
<td>PHYS210</td>
<td>Winter 11</td>
<td>3.7</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Winter11</td>
<td>n/a</td>
</tr>
<tr>
<td>MSNT506/Chem450</td>
<td>Spr 11</td>
<td>3.9/3.8</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Fall11</td>
<td>n/a</td>
</tr>
<tr>
<td>PHYS209</td>
<td>Fall 11</td>
<td>3.6</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Wint 12</td>
<td>n/a</td>
</tr>
<tr>
<td>PHYS210</td>
<td>Wint 12</td>
<td>3.6</td>
</tr>
<tr>
<td>MSNT506/Chem450</td>
<td>Spr12</td>
<td>3.6/4.0</td>
</tr>
<tr>
<td>PHYS209</td>
<td>Fall 12</td>
<td>3.5</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Fall 12</td>
<td>n/a</td>
</tr>
<tr>
<td>PHYS210</td>
<td>Wint 13</td>
<td>3.6</td>
</tr>
<tr>
<td>MSNT506/Chem450</td>
<td>Spr13</td>
<td>3.8</td>
</tr>
<tr>
<td>PHYS209</td>
<td>Fall 13</td>
<td>3.6</td>
</tr>
<tr>
<td>MSNT504</td>
<td>Fall 13</td>
<td>n/a</td>
</tr>
<tr>
<td>PHYS210</td>
<td>Wint14</td>
<td>3.7</td>
</tr>
<tr>
<td>MSNT685</td>
<td>Wint14</td>
<td>qualifying PhD exam</td>
</tr>
<tr>
<td>MSNT506/Chem450</td>
<td>Spr14</td>
<td>n/a</td>
</tr>
</tbody>
</table>

   In the last five years, I graduated five PhD in engineering and biomedical engineering as main advisor. Currently, I am a main advisor for 4 PhD grad students and a member of advisory committees of other 13 PhD grad students at IfM and Biomedical Engineering. In the last five years, I funded and advised 5 postdocs: Drs. T. Shutova, E. Abdullayev, P. Pattekari, R. Minullina and G. Cavallaro.

2. **A statement of your beliefs concerning the importance of teaching, research, and community/university service to the overall mission of the university.**

   I believe that Louisiana Tech University will be recognized as a top public research university with an unparalleled integrated educational experience. We have to create a culture of excellence in science, technology, engineering, and mathematics here at LaTech. Our nation is facing great challenges from emerging world powers (China, India, and Europe) which place a great emphasis on these
subjects. It is vital that we educate and train young professionals to be able to compete in national and
global environment and in all aspects of science and engineering including knowledge, innovation, and
leadership.

As a member of the Engineering College, I emphasize the need to train our students thoroughly in
theory and in practical laboratory work. Combing both theoretical and applied knowledge will enhance
understanding of the material and increase the retention of information. I am teaching large general physics
classes and regularly select best students for work in my research group of 10-12 students, which is a great
blend of undergraduate, graduate students and postdocs working together. I mentored many young faculties,
and this accelerated their growth by creating helpful, friendly but competitive university atmosphere.

I am sure that scientific knowledge should be accompanied with humanitarian ideas, and the
university model established by ancient Academia is still the most efficient scholastic approach. This concept
constitutes the thematic basis of the university program based on a holistic view of science, technology, and
the liberal arts. The most imminent challenge is to provide the next generation of students with a breadth of
knowledge that they can apply to problem solving, with a variety of domains, and resolve the problem using
integrated scientific understanding (for example, in genomic projects, a research must be versed in chemistry,
engineering, biology, social knowledge and business). These new challenges are reminiscent of the
Renaissance era. These Renaissance leaders were simultaneously masters of their own trades and art but also
in public relations and social communication. Therefore, it is important that we also provide our students with
such a robust platform of skills and social wisdom, which will prepare them for a challenging and rewarding
future. We can accomplish this goal by:

• **Instituting an interdisciplinary model** for the entire university. This will act as a guide for LaTech as it
  seeks to bridge traditional disciplines into innovative interdisciplinary education and research.

• **Providing innovative education** through in-house exposure to state-of-the-art instrumentation and
  computing facilities. Expose students to environments for collaborative research transcending traditional
disciplinary boundaries.

• **Facilitating diversity** in student participation and preparation.

• **Combining lessons from nature and society with multi-scale engineering design** and basic science
  principles to produce new professionals ready to advance biomimetic engineering along with a humanitarian
background and business models for their realization.

• **Contributing to a world-class, inclusive, and globally engaged science and engineering workforce.**

3. **A selected list of publications, grants, and similar activities:**

![Citation Distribution by year](image)

I published 220 papers in peer reviewed prestigious international journals with impact factors between 3 and
27, edited 3 books and wrote 23 book chapters. My total citations are **12,280** and h-index is **56** which is an
outstanding result. An average h-index for US full professors in the first 100 best research universities in
phys/chem/math sciences is 28, and in bio-medicine 30 (web data). Citation from Wikipedia
across disciplines and career levels: Hirsch suggested that, for physicists, a value for h of about 12 might be typical for
advancement to tenure (associate professor) at major research universities. A value of about 18 could mean a full
professorship, and 45 or higher could mean membership in the United States National Academy of Sciences.
Besides publications, I have eleven US, Australian and Japanese patents awarded and 2 pending. In the last
five years, with my students, I had 86 oral and poster reports at national and international conferences, and
four of them are invited major talks.

**Books edited:**


Selected 12 peer reviewed papers (from 220 total, and 46 papers were published in the last five years):


Selected completed grants in the last five years:


3. “Antibody-Based Miniaturized Immonosensors,” co-PI with M. DeCoster, NSF EPSCoR 0701491 - subcontract from Tulane, total $454,000 (my part $100,000); Jan 2008-Dec 2010. #32-0967-58270.


5. “Nanomaterials Safety Lab: Research Integrated with Service and Education (RISE),” $64,000; Enhancement BoR, co-PI, July 2010-June 2011. #32-4101-40989


$4.4 mln of my group spending from $ 7.3 mln my total (with co-PIs) funding in 2002-2013

Current research grants (May 2014):

5. “Nanoparticles toxicity tests with “cyborg” cells and model microworms.” U.S. Civilian R&D Foundation, PI, $45,000; April 2014 - March 2015

My group funding (current and completed) is $5,100,000 from the total grant’s budget with co-PIs during my tenure at LaTech of ca $12,500,000.

Honors/Awards
- Awarded with prestigious international Alexander von Humboldt Prize in recognition of lifetime achievements in nanoscale chemistry, December 2013. Y. Lvov is the first Louisiana scientist awarded with A. v. Humboldt Prize in chemistry (S. Brenner, LSU had 2005 Humboldt Prize in mathematics and U. Diebold, Tulane had 2001 Humboldt Prize in physics). Every year Germany gives 5-6 major Humboldt Prizes in chemistry; 2-3 of them usually are awarded to professors from US universities. In 2012-2013, professors from Berkley University, Lawrence Berkeley National Lab, MIT, Princeton, Georgia Tech, Caltech, and Rensselaer Polytechnic got A. von Humboldt Prizes in chemistry.
- Awarded with Honorary Professorship at Beijing University of Chemical Technology within People Republic of China Qian Ren Talents Program (the Oversea Famous Teacher), 2013.
- US National 2008 Best of Small Tech Award in the category Innovator of the Year. Best of Small Tech Awards recognize achievements in micro and nanotechnology.
- Annual Award: 2007 Outstanding Louisiana Researcher in Emerging Technologies (Diploma awarded by the Governor).
- Medal for Best Research Achievements from Engineering Department, LaTech, 2005

4. A selected list of community/university service activities.
IfM level:
- Member of IfM Leadership Team;
- I run IfM Nanotechnology Lab which provides service for many students from D. Mills, M. Decoster, J. Palmer, S. Zivanovich, L. Que, H. Cardenas, E. Guilbeau, R. Null and other research groups with different analytical and preparative techniques.

College level:
- Developed collaboration with Nanomedicine Institute, Northeastern University, Boston (V. Torchilin and K. Lewis)
- Developed collaboration with Max Planck Institute for Colloids and Interfaces, Potsdam, and Tech University of Berlin, Germany (Profs: R. von Klitzing and H. Moehwald,) in the frames of major anticorrosion coating project funded by G8 Research Committee/NSF.
- Member of tenure / promotion committees for Electrical Engineering, Biomedical Engineering, Chemistry and Physics Programs, 2010-2014.

University level:
- Member of Steering Committee for Governor Biotechnology Initiative (GBI) program integrating efforts of Engineering and Biology colleges.
- Member of steering committee for PhD Molecular Science and Nanotechnology program (joint COES & Biology PhD program).
- Invited talk at LaTech Society of Physics Students, April, 2013 “Nanotechnology and our Niche in the National Program.”

Service to Community:
- Coaching Cedar High School students Mary Storms and her friends to involve in LaTech engineering program. Taught two Cedar school students in 2012-2013 (Stefan Kunz, Anna Brown).
- Invited talk at the Rotary Club in Ruston, June 2013 “New nanotechnology PhD program at LaTech.”

Research results dissemination:
- Paper TechTalk, Feb 6, 2014 “Professor wins national award,” and ten internet papers on A. v.Humboldt Prize to

- Paper in Louisiana Tech Journal, #31, April 2104, p.11, “World renown chemist one of Tech’s own.”
- TV interview at Shreveport KSV3 program, April 06, 10 p.m., “LaTech research in cancer.”

**Service to National Science Societies:**


4) • I was an organizer and chair of “Polymer-clay nanocomposite-2” Symposium at 245th American Chemical Society Meeting in New Orleans, April 8-11, 2013. This successful symposium attracted over 200 bio/nanomaterial experts from all over the world. • I am an organizer and chair of “Polymer/clay nanocomposite-3” Symposium at 251th American Chemical Society Meeting in San Diego, April 8-11, 2016. Org. work is in progress.