PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Engineering and Computer Science

Joe Lo, assistant professor of mechanical engineering, Department of Mechanical Engineering, College of Engineering and Computer Science, is recommended for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering and Computer Science.

Academic Degrees:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Year</th>
<th>Institution and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>2007</td>
<td>Bioengineering, University of Southern California, Los Angeles, CA</td>
</tr>
<tr>
<td>B.S.</td>
<td>2000</td>
<td>Biomedical Engineering, University of California, Berkeley, CA</td>
</tr>
</tbody>
</table>

Professional Record:

<table>
<thead>
<tr>
<th>Year</th>
<th>Position and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 – present</td>
<td>Assistant Professor of Mechanical Engineering, Department of Mechanical Engineering, University of Michigan-Dearborn, Dearborn, MI</td>
</tr>
<tr>
<td>2009 – 2012</td>
<td>Post-doctoral, Bioengineering/Center for Wound Healing, University of Illinois at Chicago, Chicago, IL</td>
</tr>
<tr>
<td>2007 – 2008</td>
<td>Post-doctoral, Department of Biosystems Science and Engineering, ETH Zürich, Switzerland</td>
</tr>
</tbody>
</table>

Summary of Evaluation:

Teaching: Professor Lo is rated excellent in teaching. He is an effective teacher, as evidenced by the teaching evaluations from both his students and his peers. His average effectiveness from the student evaluation for classroom teaching over the past five years was above 4.25 out of 5.0. This places him within the top 20% among the ME faculty members. Responses from students interviewed also support the written evaluations. Professor Lo was among the first group of faculty members hired for the new bioengineering program. He put a significant amount of effort in organizing the teaching laboratory for bioinstrumentation and biosensing and in developing new bioengineering courses in the area of his expertise. Since arriving to the Dearborn campus, he taught eleven regular in-class course sessions, developed and taught three new courses, all in bioengineering. He has supervised eight teams of senior design projects and co-supervised two more with other faculty members.

Research: Professor Lo is rated excellent in research. His research centers on development of microfluidics for hypoxia, Fluorescence lifetime biophotonics and microscopy, nanoplasmonic droplet microarrays, artificial pancreatic islets for diabetes and MEMS. Since joining Dearborn, he has obtained five internal and three external grants as a sole and co-PIs. Of the three external grants, he was the sole PI of the NIH grant totaling $155,292 and participated in two NSF MRI grants totaling ~$600,000. He has penned fourteen journal papers, of which thirteen were published and one is under review in addition to five conference papers, and seven oral and six poster conference presentations, since Fall 2012. He has supervised five M.S. theses, of whom two are in progress, and published their research findings in peer-reviewed journals.
Recent and Significant Publications:


**Service:** Professor Lo is rated excellent in service. He has served on various department and college committees and has been instrumental in developing the proposal for M.S. program in bioengineering. He currently also serves as a college library representative. He has actively participated in his professional society.

**External Reviewers:**

Reviewer A: “Professor Lo’s research has accelerated and expanded significantly in the past few years to establish himself as a leading independent researcher. His work in microfluidics, biochemical detection, and fluorescence lifetime-based imaging is highly relevant and important. For example, his 2016 *Sensors* paper on a microfluidic Tesla pump is very original and a great contribution to the microfluidics field. It is also very timely in utilizing 3D printing technology to develop the microfluidic components.”

Reviewer B: “Dr. Lo received his bioengineering training from two eminent labs at Berkeley and USC. ... For instance, in his 2015 Biosensors and Bioelectronics paper, Dr. Lo reported a novel method using capture antibody immobilized porous poly (ethylene) glycol diacrylate (PEGDA) hydrogel microspheres to enable high sensitivity VEGF detection in arrayed microfluidics. ... As a junior faculty member, Dr. Lo has a great funding record. He is the sole PI of a successful R03 grant from NIH NIBIB. ... Overall, I would rate Dr. Lo among the best of microfluidics-driven bioengineering researchers in his same career stage.”
Reviewer C: “Dr. Lo has built an impressive biomedical program where he has mentored 10 graduate students and secured funding from NSF and NIH. His NIH grant (sole PI) on applying microfluidics to study hypoxia and beta cell is very competitive. ... I have read the papers carefully. The work was original and conducted at UMD.”

Reviewer D: “By developing and applying novel micro-technologies including microfluidics, Dr. Lo’s group aims to model and test various biomedical phenomena in an in-vitro set up. ... This approach is very novel and meritorious since there is currently no reliable in-vitro methods to test the synergy of the two factors. ... Importantly, this research has been funded by NIH R03 .... This idea was very novel and the developed microdevice is expected to significantly improve the disease marker detection efficiency. ... This disadvantage may be resolved by the novel detection device developed by Dr. Lo’s group. Dr. Lo’s recent publications .... These are all very prestigious journals highly recognized by the peers in the field, and the manuscripts were with his students.”

Reviewer E: “His published work indicates he is a thorough and inventive engineer... Although he has, by some standards, a moderate number of publications than might be expected at his stage, given his teaching responsibilities and outreach activities I would still rank his publication record as strong.”

Summary of Recommendation:
Professor Lo is an excellent researcher, as is evidenced by his funding and publication records. His research centers on the development of microfluidics and nanophotonics for biomedical applications. Professor Lo is an excellent teacher, and his teaching effectiveness ranks in the top 20% among the ME faculty by students’ evaluation of his classroom teaching performance. His service to the department and the college/university is outstanding, and he has been very active in participating in his professor societies. We are pleased to recommend, with strong support of the College of Engineering and Computer Science Executive Committee, Joe Lo for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering and Computer Science.

Anthony W. England, Dean
College of Engineering and Computer Science

Daniel Little, Chancellor
University of Michigan-Dearborn

May 2018