The global competition for talent: Life science and biotech careers, international mobility, and competitiveness

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ACADEMISCH PROEFSCHRIFT

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Many people and institutes have helped shape this project and me as a researcher, and I am truly indebted to the time they spent, their knowledge, and the experiences together.

I first became aware of what a PhD entailed as a Sociology Bachelor’s student, and am indebted to one of my first Sociology instructors and academic advisor, Dr. Michael Katovich at Texas Christian University, for inviting me to present at an academic conference and broadening my mind to new ways of looking at the world and theories.

I am utterly grateful to Prof. Jan Rath. I have worked with him now for over a decade, as a research assistant, as my academic advisor, Master’s thesis supervisor, in *Gaining from Migration* research project, and now as the Promotor of my PhD. Jan has always been supportive of ideas, encouraging me to develop them further, and trusting me to find my own path. And, I was always amazed how easily Jan could advise me and get me on track when I got stuck, with advice that is both practical and visionary. Jan, you have been a great source of inspiration to me through these years.

Additionally, I would especially like to express my gratitude to the Young European Biotech Network (YEBN) and those who partnered with me to launch the Careers in Life Sciences (CiLS) scientist survey, as well as the Nature group who hosted a link to the survey online on *Naturejobs*. Special thanks goes to those who volunteered as part of the core team of our Careers in Life Sciences (CiLS) project – Emilia Daniłowicz-Luebert, who took on the role as CiLS project leader within YEBN, and also Tabea Dierker, Dominik Heinzmann, Alba Olivares Polo, and Olga Goncharova – for providing a truly perfect, international, interdisciplinary partnership. I will never forget our first meeting in Bern, Switzerland, where I flew in without knowing what to expect, and left with a new fabulous team and the birth of the CiLS project. It was the kind of partnership that not only involved a mutually shared interest and great synergies in a project, but one that involved lots of smiles as well as focused meetings, whether on Skype, email exchange or in person. Thanks also to all those at YEBN who helped facilitating contacts to assist our survey data collection – and here special thanks goes to Debora Keller and Francesco Lescai – as well as the many others at YEBN who were involved. I am also grateful to YEBN as a whole for embracing the CiLS project, and for providing opportunities to present the research results to such an enthusiastic, inspiring group of life scientists. And not only just to present (and to be present), but to be seen as a valuable scientist and voting member of YEBN, despite not being a life scientist.

I am also forever thankful to all the individuals around the world, who took time to answer the CiLS survey, and those who participated in interviews. I thank you for your time, and hope that the contents of these pages express your career dreams and frustrations, in a way that can lead to better understanding.

The late Dr. Uwe Becker and the ‘Smallcons’ Amsterdam political science research team (aka the girls) – Franca van Hooren, Natascha van der Zwan, and Corina Hendriks – who I worked
alongside as a research assistant during my Master’s studies were also instrumental. Uwe’s guidance on competitiveness and political economy funneled a curiosity for a topic I would have otherwise never explored. He gave me crucial feedback, particularly for the proposal and earliest drafts of chapters, supported my scholarship applications, and generally gave me a lot of advice to move forward with pursuing a PhD. Uwe did not see immigration research as part of competitiveness, though, and this skepticism also aided in my analysis.

Volunteering at The Hague Process on Refugees and Migration (THP) was both meaningful and opened my eyes to seeing immigration issues on a truly global scale, and to hear first-hand from many of the experts and leaders, whether academic, from NGOs, or those politically active in this field. The work of THP is truly inspiring and I am thankful for all the people I was able to work with at THP on issues of policy coherence for migration and development – Frans Bouwen, Antoine Meyer, and Auke Witkamp.

I would also like to thank the various research institutes I was affiliated with and scholarships that made this research possible. The Institute for Migration and Ethnic Studies (IMES) at the University of Amsterdam was instrumental in this project. IMES is full of fabulous people, who not only gave me feedback on the proposals and drafts and great conversations in the office, but also provided many other types of support, ranging from a place to stay at the end of my lease, a ride to storage, residence permit or funding advice, fixing my bicycle, and an attic to keep things while away – Jeroen Doomernik, Blanca Garcés-Mascareñas, Pascal Beckers, Mar Griera, Maria Bruquetas Callejo, Elif Keskiner, and Manolis Pratsinakis. Special thanks go to Jeroen, who often said in a sentence an idea or joke related to our research interests that would stick with me and make me think, and is reflected in these pages. The Faculty of Economics at Vilnius University and particularly the assistance of Prof. Greta Druteikiene gave me a memorable, warm welcome (and always with chocolates!) during my time as a Fulbright grantee for the 2008-2009 academic year, as well as a great opportunity to create a class and teach (and also learn from) Lithuanian and Erasmus students. I am also thankful for the support provided by the US embassy in Vilnius. I was also honored to be a researcher from June 2009-2010 at Institute for Research on Migration, Ethnicity, and Society (REMEXO) at Linköping University with support from Prof. Carl-Ulrik Schierup, and thanks to a Swedish Institute scholarship. Finally, I am grateful to the Institute for Migration and Ethnic Studies for providing a scholarship upon my return to the Netherlands from June 2010-2011.

The year in Lithuania was one of the best experiences in my life. I am thankful for my neighbors Rubenas and Gita, who I met with a bucket in their hands at my front door when they realized a pipe had broken in the ceiling (over my laptop, nonetheless) while I was out. That meeting was the start of much great time spent together – whether in the forest picking mushrooms or in the laptop store negotiating repairs. Also, Virgis and Inga introduced me to Lithuanian culture through their warm friendship with me and the other Fulbrighters, Cathy and Charlie. I will always cherish the get-togethers the five of us had, and often wish I could go back and replay that year.

Many others were involved in this research at diverse, critical stages. Thanks to Manon Tiessink for volunteering her time at the University of Amsterdam as a research assistant, and the
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To my dear friends who I met early on during my Master’s degree in Amsterdam – Brit Lynnebakke, Claire Meeussen, and Karin Schaake – you formed the cornerstone of both academic encouragement and also personally as life turned in unexpected ways from the start of my Amsterdam life chapter of life until now. I am thankful for all the understanding, the laughter, and adventures I have shared with each of you!

To my parents – I cannot think of a single time when you were not encouraging me, even when those dreams have led to me wandering around the world or, say, when you met my fiancé only a few days before our wedding. I am forever grateful for the freedom and love you give me. I am also thankful for the encouragement from my big brothers, Trent and Aaron. I would not be who I am today without you as my family.

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Branyo, you are the love of my life, my greatest support, the balance of my weaknesses, the one who can always makes me laugh and smile. I once heard the general advice to wait until a PhD is finished before getting married, due to the PhD stress involved. Although I thought it made sense at the time, I am so thankful I did not follow this advice. With you, the seemingly difficult becomes much easier. It was you who took me from being proud of being independent to being interdependent. I love you completely and cannot imagine my life without you.

I would not have been able to make it to where I am now without faith, and am thankful for God for the challenges overcome and for uncountable blessings. Thanks to all those who said prayers for me when they knew I needed it.

Thinking back at the names listed of those that helped me during this project, individuals from more than 15 different countries, worked closely with me and influenced. Additionally, people from 69 countries took the time to share their thoughts and experiences through the CiLS survey. People may debate what global skilled, scientific, or student mobility will or should bring, but it is evident that changes are happening! My greatest wish is that at least one person will be inspired by this research and advance the research topic further than I ever could alone.
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Abbreviations related to this research study:

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>CiLS</td>
<td>Careers in Life Sciences survey and study</td>
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<td>YEBN</td>
<td>Young European Biotech Network</td>
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Geographic abbreviations:

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>BRIC</td>
<td>Brazil, Russia, India, and China</td>
</tr>
<tr>
<td>CEE</td>
<td>Central and Eastern European</td>
</tr>
<tr>
<td>EEA</td>
<td>European Economic Area</td>
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<tr>
<td>EFTA</td>
<td>European Free Trade Agreement</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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Abbreviations related to policy:

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<thead>
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<th>Description</th>
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<tr>
<td>ERA</td>
<td>European Research Area</td>
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<tr>
<td>GATS</td>
<td>General Agreement on Trade in Services</td>
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<tr>
<td>HRST</td>
<td>Human resources in science and technology</td>
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<tr>
<td>IT</td>
<td>Information technology</td>
</tr>
<tr>
<td>MINT</td>
<td>Mathematics, information sciences, natural sciences, and technology</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
</tr>
<tr>
<td>S&amp;E</td>
<td>Science and engineering</td>
</tr>
<tr>
<td>SET</td>
<td>Science, engineering and technology</td>
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<tr>
<td>STEM</td>
<td>Science, technology, engineering and mathematics</td>
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