

A sense of belonging in the chemical sciences



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I still remember my chemistry teacher inspiring me with her leadership. She had a PhD in chemistry and made me feel that I could find my place in the chemical sciences, and aspire to become a leader.

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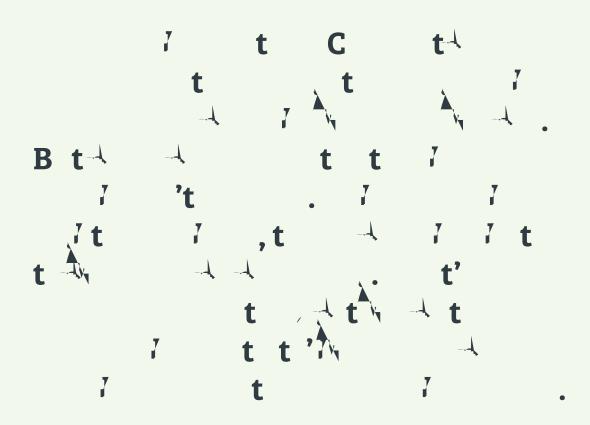
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Dr Helen Pain CChem FRSC Ch ef E ec t e R a S c et f Che t

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When chemists feel they belong, they do better work Chen't ad the ee fbe g g nact at ceat t nd ct t c ab at ne face, ge ad ete t A a e t fee g ee be g ead t bette ce ce to re

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The five enablers of belonging

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We can all take action to help everybody feel like they belong in the chemical sciences. We have et tale ele fact if it is did a and igal at the ele it.

Our three commitments

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Belonging matters. It a ects chemists' ability to share ideas, try new things, collaborate and ultimately to enjoy their work and stay in the profession.

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A sense of belonging leads to better science outcomes Che t ad the a e te at ea d c eat e he the fee the be g The e ab the g dged a dfee feet have the ad g eth g ag The a e te a at eab the e c ab at ea d e f c ed

"When I felt I belonged, I was very productive, I collaborated a lot, I really enjoyed it."

"When you don't feel you belong you feel you're not really doing good science, it's not amounting to anything, you're not hi ing the bar."

Conversely, not belonging negatively impacts science outcomes Che t h d t fee the be gare e t c t b te the dea, are the ta t r a f hat the a

"I qualify what I say. I say, 'maybe this is a bit naïve of me' or 'sorry if I've misunderstood', so it's not perceived as o ensive. I feel I'd be judged if I didn't."

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In the workplace, employees who f68 06eel a sf belonging ar68 06e:







1. Being told that you don't belong directly or indirectly.

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2. Being the only one with a particular lived experience or identity.

"The higher up you go, the less women there are, and the more women feel like they don't belong."

"There has not been a good role model throughout my entire career in the chemical sciences with the same ethnicity as me."

"When I struggled with mental health, I didn't feel I belonged, as I couldn't see others like me sue ering in the same way."

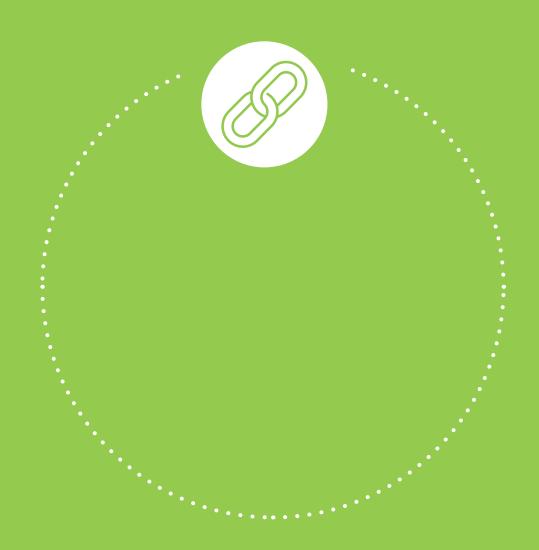
3. Being excluded and 'othered' by peoples' assumptions, stereotypes and biases

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The insights from the chemists involved in this study suggest there are five enablers of belonging in the chemical sciences. These are:



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thin that group of other D/deaf scientists, I feel I do ong. We have a shared language, and we can talk out our passion for science."

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"I had a supportive supervisor, who treated me like my ideas were valued. I'd never had that before. That made me want to continue in academia, where other experiences had dissuaded me." made me want to continue in academia, where other experiences had dissuaded me."

3. D t

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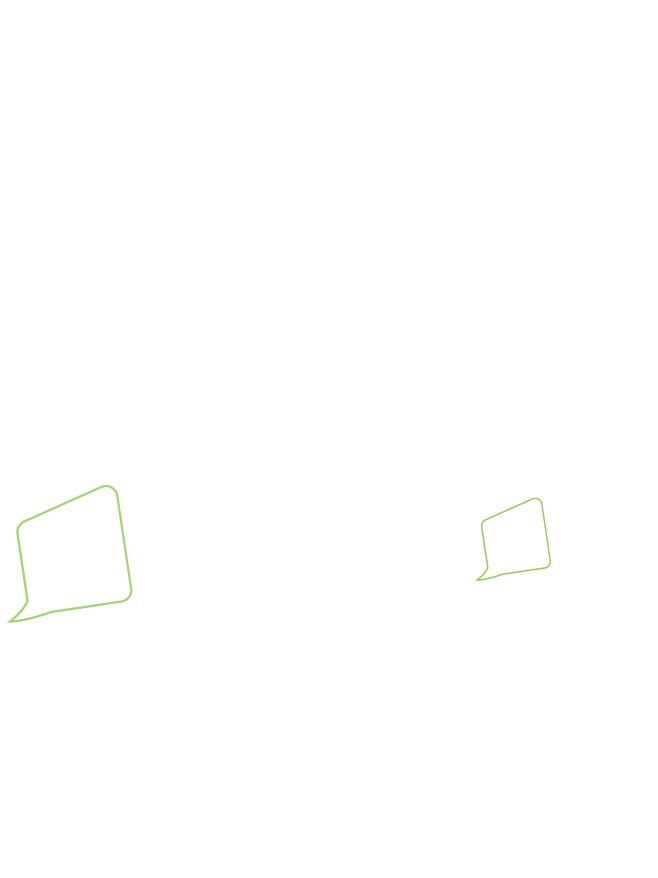
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	Low belongingness	High belongingness
Low value placed on uniqueness	Exclusion I d d a tteated a a de the eaebt the eae the hae de	Assimilation I d d a treated a a der he the c from t ga at a drom a tc tree a dd rather e e
High value placed on uniqueness	Di erentiation I d d a tteated a a de b t the e chaacte tcae ee a a abeade edf g	

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Actions for organisations

Increase diversity in the chemical sciences community Th at a tale are e, t cheate a denage for e and de to a de to a

Incorporate belonging into inclusion and diversity strategies The fee abe fee be gede the dealer of the gede at he gede that character conditions are described by the state of the state o

Create opportunities for people to talk ab the e reare ce fbe g g a d to be g g a d a dated

Make networking more inclusive The code way get get who find a df way we we bett gee bod who about hot accent the wilt a deal of the get who the calculation area of the get with the calculation of the get with the get with

Increase accountability for those in position of authority Ceat gac tef be ggh dbeae ctast far age adeade ba a at fthe ebe gfthe team

"It's about making people feel like they are part of the bigger group."

"Get people talking about [race], get White people talking about it. People don't want to talk about it in case they get it wrong, in case they get into trouble. But if you don't talk about it how are you going to find answers?"

"Are the people in the team happy, do they feel accepted, like they belong, genuinely, not in terms of being a square peg in a round hole? Holding leaders to account for their team's emotional state."

Building your own sense of belonging

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Seek out and nurture supportive relationships Th c de b d g e at h in the ine h have the ante ede ine e ce, a e a ad cate a da e Th c d be the gh gett g ed act te cha tee g teach g g g in a d c in the e
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"[When] I moved to chemistry I felt like an outsider. I felt like I had to justify myself for being there. But I started feeling a sense of belonging when I began teaching, became more involved with the RSC."

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Use assertiveness tools to increase visibility and confidence Th c de def g efa a che t that ght be g the c that ha et c the seche t a d g t e e ftant tatege he the b d the c fde cet have the dea The a ad ta gf c ed a d determent of the case of ef
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"At this point I feel like I belong but it's through willpower that I've convinced myself I'm right to be here. I've received messages that I don't belong, either overt or unconscious. So it's been about overcoming that messaging for me."

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Take self-care seriously The code be go and fither the and the code be go and fither the and go to go that he is to be go and go to go the the go that he is to be go and go to go the the go that he is to be go and go to go the the go that he is to be go and go to go the the go that he is to be go and go to go t
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"With my team I know that my ideas will be valued. But it was a dierent situation when I was doing my PhD and it led to a mental health crisis for me. I chose to stay but I know people who have left because of not-belonging."

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E orts to increase inclusion and diversity must also focus on belonging.

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All of the chemists who took part in this study shared experiences of belonging in the chemical sciences, and of not-belonging.

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Questions of belonging, and experiences of not-belonging, are especially relevant in the lives and careers of groups under-represented in the chemical sciences community.

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Building belonging requires that individuals and organisations pay attention to all five enablers of belonging: connection, respect, diversity, inclusion and an intention to belong.

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Some part of belonging is about having the intention to belong, but individuals cannot achieve a sense of belonging by themselves.

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1. PhD students



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