

Preparing Students for Collaborative Work Beyond Graduation

ACS Webinar, April 15, 2021

Learning more

Read these reports and articles for more information about research on identifying, developing, and assessing professional skills

Busby, B., Harshman, J. [Program Elements' Impact on Chemistry Doctoral Students' Professional Development: A Longitudinal Study](#). *Chem. Educ. Res. & Pract.* **2021**, 22, 347-363, DOI: doi.org/10.1039/D0RP00200C

Cui, Q., Harshman, J. [Qualitative Investigation to Identify the Knowledge and Skills That U.S.-Trained Doctoral Chemists Require in Typical Chemistry Positions](#), *J. Chem. Educ.* **2020**, 97, 5, 1247–1255. DOI: 10.1021/acs.jchemed.9b01027

Bixenmann, R., Natalizio, B. J., Hussain, Y., Fuhrmann, C. N. [Enhancing Dissemination of Evidence-Based Models for STEM PhD Career Development; a Stakeholder Workshop Report](#). Worcester, MA: Professional Development Hub, University of Massachusetts Medical School. 2020. DOI: 10.13028/79a5-ym66

Kondo, A. E., Fair, J. D. [Insight into the Chemistry Skills Gap: The Duality between Expected and Desired Skills](#), *J. Chem. Educ.* **2017**, 94, 3, 304–310. DOI: 10.1021/acs.jchemed.6b00566

[Integrating Professional Skills into Undergraduate Chemistry Curricula](#), Neiles, K. Y., Mertz, P. S., Fair, J. (Eds), ACS Symposium Series, volume 1365, 2020. DOI: 10.1021/bk-2020-1365

National Academies of Sciences, Engineering, and Medicine. [Graduate STEM Education for the 21st Century](#). Edited by A. Leshner and L. Scherer. Washington, DC: The National Academies Press. 2018. DOI: 10.17226/25038

National Research Council. [Enhancing the Effectiveness of Team Science](#). Edited by N. J. Cooke and M. L. Hilton. Washington, DC: The National Academies Press. 2015. DOI: 10.17226/19007

Thompson, M. M. Lamanna, A. C. [Catalyzing Group Work in Introductory Chemistry: Evaluation of Five Strategies](#), *J. Chem. Educ.* **2020**, 97, 2, 351–357. DOI: 10.1021/acs.jchemed.9b00454

Verderame, M. F., Freedman, V. H., Kozlowski, L. M., & McCormack, W. T. [Competency-Based Assessment for the Training of PhD Students and Early-Career Scientists](#). *eLife* **2018**, 7, e34801. DOI: 10.7554/eLife.34801

Putting research into practice

Visit these websites for more information about using research-based approaches for professional development

Employment information:

[How College Contributes to Workforce Success](#)

National Association of Colleges and Employers - [Job Outlook 2019](#)

Training materials:

[Entering Research Curriculum](#)

Rubrics to assess collaborative and professional skills:

[Enhancing Learning by Improving Process Skills in STEM](#) (ELIPSS)

*These resources are provided for informational use only. Inclusion on this list does **not** constitute an endorsement by ACS.*

Using ACS resources

Visit these websites for resources and opportunities to help build career awareness and facilitate the process of developing a professional self, attitudes, values, and skills

Anticipatory

[Exploring Career Options](#) (ACS Career Navigator™)

[C&EN Careers](#)

[College to Career](#)

[ACS Career Pathways™](#)

[ACS Webinars®](#)

Formal

[Development of Student Skills in a Chemistry Curriculum](#)

[ACS Leadership Development System®](#)

Informal

[Finding Networking Opportunities](#) (ACS Career Navigator™)

[Communities for collaborating and networking](#)

[Volunteer & Outreach](#)

Personal

[Developing & Growing in your Career](#) (ACS Career Navigator™)

[Personal Career Consulting](#) (weekly ACS Career Consultant [Virtual Office Hours](#))

[ChemIDP™](#)

[ACS Webinars®](#)

[Individual Development Plans: Understanding Yourself to Thrive Personally and Professionally](#)
[Using the Science of Mentorship for Mentorship in Science](#)

Check out these selected columns for insights and advice on working with others

Bench & Cubicle:

[Chemjobber on heretics in the lab](#), *Chem. Eng. News* **2019**, 97 (11).

[Communicating in the socially-distanced workplace](#), *Chem. Eng. News* **2020**, 98 (28).

[The unwritten rules of sharing in the laboratory](#), *Chem. Eng. News* **2018**, 96 (29).

Office Hours:

[Jen Heemstra on the importance of relationships in science](#), *Chem. Eng. News* **2019**, 97 (40).

Career Tips:

[How to be a better leader](#), *Chem. Eng. News* **2016**, 94 (39).

Graduate Education:

[How to prepare for life after graduate school](#), *Chem. Eng. News* **2018**, 96 (36).

Refer to this report for recommendations regarding career preparation

[Advancing Graduate Education in the Chemical Sciences](#): Summary Report of an ACS Presidential Commission. American Chemical Society: Washington, DC, 2013.