

Contents

1	Why? Identifying the Impetus for K-12 Outreach and Engagement.....	1
1.1	Definitions and a Common Ground	1
1.2	Motivations: Context, Carrots, and Sticks.....	4
1.3	Motivations: Personal and Public Gains	6
1.4	Challenges	10
	References.....	13
2	Who and What? Defining the Scope of K-12 Outreach and Engagement.....	17
2.1	Passion.....	17
2.1.1	Example of Developing K-12 Outreach and Engagement Activities Based on Current Research.....	18
2.1.2	Putting Your Passion in Context.....	20
2.1.3	Science Education Standards: An Example of the Slippery Slope.....	21
2.1.4	Beyond Your Passion	22
2.1.5	History, Processes, and Nature of Science	23
2.2	People.....	25
2.2.1	Elementary Students and Teachers.....	25
2.2.2	Middle School Students and Teachers	25
2.2.3	High School Students and Teachers	26
2.2.4	Other Points to Consider	26
2.3	Process.....	27
	References.....	29
3	How? Developing the Plan and Making It Happen	33
3.1	Identifying Needs	33
3.1.1	Example of Identifying and Responding to Needs	35
3.2	Matching Needs with Resources	38
3.3	Choosing the Approach.....	40

3.3.1	Join Existing Programs	40
3.3.2	Example of an Existing Program in Search of Interested Scientists	42
3.3.3	Example of Initiating an Independent Project after Involvement in an Established Effort.....	43
3.3.4	Curriculum Enhancement.....	44
3.3.5	Student–Teacher–Scientist Partnerships	46
3.3.6	Example of Initiating an Independent Partnership after Involvement in an Established One	48
3.3.7	Example of a Student–Teacher–Scientist Partnership.....	50
3.3.8	Student–Focused Outreach.....	54
3.3.9	Example of Student-Focused Outreach.....	55
3.3.10	Professional Development.....	57
3.3.11	Example of Complementary Professional Development for Teachers and Scientists.....	58
3.3.12	Example of Teacher Professional Development	62
3.3.13	Other Venues	64
3.3.14	Additional Points to Consider	65
3.4	Funding the Effort	66
	References.....	67
4	How Well? Evaluating K-12 Outreach and Engagement.....	69
4.1	Introduction	69
4.2	Definitions: What is Evaluation?.....	70
4.3	What do You Want to Know?.....	71
4.4	Who Wants to Know?.....	73
4.5	What Resources are Available?.....	74
4.6	How Will You Know It?.....	75
4.7	Other Logistics of Evaluation	76
4.7.1	External Evaluation	78
4.8	Research	78
	References.....	80
5	Sharing the News: Disseminating Information about Your Work and its Impact	83
5.1	What to Disseminate?	83
5.2	How to Disseminate?	84
5.3	What Does the Future Hold?.....	86
	References.....	87
	Index.....	89



<http://www.springer.com/978-0-387-77791-7>

Education Outreach and Public Engagement

Dolan, E.

2008, VIII, 91 p., Softcover

ISBN: 978-0-387-77791-7