BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. DO NOT EXCEED FIVE PAGES.

NAME: Sharon A. Tooze

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Group Leader

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
College of the Holy Cross, MA, USA	BA	1979	Physics
Yale University Medical School, CT, USA	MS	1982	Cell Biology
University of Heidelberg, Heidelberg, Germany	PhD	1987	Cell Biology

NOTE: The Biographical Sketch may not exceed five pages. Follow the formats and instructions below.

A. Personal Statement

My laboratory has aimed to understand the molecular and cellular response in cells to the induction of Autophagy since 2002. Prior to this my training and research was directed towards understanding the molecular basis of regulated secretion in neuroendocrine cells. The common theme of my work since 1990 is to gain an understanding of how cells respond to changes in their biosynthetic demands at the level of the membrane trafficking of proteins and organelle function. This research is fundamental to gaining an in-depth understanding how cells undergoing transformation from normal to tumor cells survive by altering their biosynthetic behavior. Our approach to understanding the cellular changes has been to identify and study essential proteins required for the pathways. My laboratory though this work has identified a several essential autophagy proteins including ULK1, Atg9, and WIPI2, along with novel regulators of autophagy, most recently WAC. My laboratory has undertaken genome wide-screens to identify novel regulator of starvation-induced autophagy, and more recently autophagy in pancreatic tumor cell lines which require to autophagy to metastasize. My expertise combines both an in-depth understanding of the molecular mechanisms of autophagy, with the development of approaches to identify novel targets relevant for pancreatic cancer, a disease with unmet need. In addition, since the beginning of my career I have organized scientific meetings (15 meetings between 1996-2016) which the aim to encourage exchange of scientific ideas, networking, and for the promotion in particular of young scientists, both men and women.

B. Positions and Honors

Positions and Employment:

1979-1980 Editorial Assistant, Cold Spring Harbor Laboratory, NY, USA
1980-1981 Research Assistant, Cold Spring Harbor Laboratory, NY, USA
1981-1982 NIH predoctoral fellow, Yale University, CT, USA
1982-1986 EMBL Pre-doctoral fellow, EMBL Heidelberg, Germany
1987- 1990 EMBL Post-doctoral fellow, EMBL Heidelberg, Germany
1990-1993 Staff Scientist, EMBL Heidelberg, Germany
1994-2002 Group leader, ICRF, London, UK
2002-2015 Senior Group Leader, Cancer Research UK, London, UK

2003-present Honorary Professor, UCL, Division of Life Sciences, London, UK
2015-present, Senior Group Leader, The Francis Crick Institute, London, UK

Other Experience and Professional Memberships:
1985- American Society of Cell Biology (ASCB)
1991- The Biochemical Society
1994- The British Society for Cell Biology (BSCB)
2008- American Society for Biochemistry and Molecular Biology (ASBMB)
2014- Panel member, Research Council of Norway

Honors and Awards:
1981 NIH Predoctoral Award
1982 EMBL pre-doctoral Award
1986 EMBL Post-doctoral Award
1994 ICRF 5 year funding Award
1996-2001 EU training and Mobility Researchers Award
1996, 1998, 2000, 2002, 2005, 2008, 2011 Co-Chair EMBO Workshop on Proteins Sorting and Secretion
2001-present Faculty of 1000, Cell Biology Faculty, Biology Reports Ltd
1998-2006 *Biochemical Journal* Editorial Board member
1998-2014, *Traffic* Editorial Board member
2002 Cancer Research UK 5 year funding
2007-2011 Biochemical Society Theme panel IV member
2007-2009 Autophagy, Editorial Board member
2007 Cancer Research UK 5 year funding
2008-2010 MRC Basic Research Grant
2009-present Autophagy, Associate Editor
2010 EMBO member
2010 ELSO Co-chair, Autophagy session
2010 Co-Chair Harden Conference on Autophagy in Health and Disease
2010 (Co-Vice Chair) and 2012 (Co-Chair) Gordon Conference Research Conference on Autophagy
2011-present *EMBO Journal*, Editorial Board
2011 Co-Chair BSCB meeting, Cell Biology of Ubiquitin-dependent Protein Degradation Pathways
2012, 2014 EU-I3 grant-Basic Research Bessy Beamline funds
2012 Cancer Research UK 5 year funding
2013 Co-Chair EMBO workshop on Autophagy: Molecular Mechanism, Physiology and Pathology
2013-present *Molecular Cell Biology*, Editorial Board
2014-2016 Astellas Pharmaceutical Research Grant "Identification of inhibitors of autophagy in pancreatic cancer"
2015- *Traffic,* Associate Editor
2016 Co-Chair Keystone Conference on Autophagy
2016 Chair 41st FEBS session on Autophagy

C. Selected publications

1. Tooze, S.A., and Huttner, W.B. (1990), Cell-free protein sorting to the regulated and constitutive pathways. **Cell,** 60, 837-847.
2. Tooze, S.A., Weiss, U., and Huttner, W.B. (1990), Requirement for GTP hydrolysis in the formation of secretory vesicles. **Nature**, 347, 207-208.
3. Urbé, S., Page, L.J., Tooze, S.A. (1998), Homotypic fusion of immature secretory granules during maturation in a cell-free assay. **Journal of Cell Biology**, 143, 1831-1844.
4. Kakhlon, O., Sakya, P., Larijani, B., and Tooze, S.A. (2006) Dominant negative GGA inhibits membrane remodeling and substrate processing in maturing neuroendocrine secretory granules. **EMBO Journal**, 25:1590-1602.
5. Young, A., Chan, E.Y.W., Hu, X. W., Köchl, R., Cranshaw, S.G., High, S., Haley, D., Lippincott-Schwartz, J., Tooze, S.A. (2006) Starvation and ULK1-dependent cycling of mammalian Atg9 between the TGN and endosomes. **Journal of Cell Science**, 119:3888-3900.

6. Chan, E. Y. W., Kir, S., and Tooze, S.A. (2007) siRNA screening of the kinome identifies ULK1 as a multi-domain modulator of autophagy. **Journal of Biological Chemistry**, 282:25464-25474.
7. Razi, M., Chan, E.Y.W., Tooze, S.A. (2009) Early Endosomes and Endosomal Coatomer are required for Autophagy. **Journal of Cell Biology**, 185:305-321.
8. Webber, J.L. and Tooze, S.A. (2010) Co-ordinated regulation of autophagy by p38α MAPK through mAtg9 and p38IP. **EMBO Journal**, 29:27-40.
10. Longatti, A., Lamb, C.A., Razi, M., Yoshimura, S.-I., Barr, F. A., Tooze, S.A. (2012) TBC1D14 regulates autophagosome formation via Rab11 and ULK1-positive recycling endosomes. **Journal of Cell Biology,** 197:659-675.
11. McKnight, N.C., McKnight, N. C., Jefferies, H.B.J., Alemu, E.A., Saunders, R.E., Howell, M., Johansen, T., Tooze, S.A. (2012) Genome-wide siRNA screen reveals amino acid starvation-induced autophagy requires SCOC and WAC. **EMBO Journal,** 31:1931-1946.
12. Dooley, H.C., Razi, M., Polson, H.E.J., Stephen E. Girardin, S.E., Michael I. Wilson, M.I., Tooze, S.A. (2014) WIPI2 Links LC3-Conjugation with PI3P, Autophagosome Formation and Pathogen Clearance by Recruiting Atg12–5-16L1. **Molecular Cell**, 55:238-52.

Complete List of Published Work in MyBibliography: Complete List of Published Work in MyBibliography:

http://www.ncbi.nlm.nih.gov/sites/myncbi/1tYTkpXSVeS5x/bibliography/48242121/public/?sort=date&direction=descending

D. Research Support

Astellas Pharmaceuticals, Japan Tooze (PI) Nov 2014-Dec 2016
"Identification of inhibitors of autophagy in pancreatic cancer"
Goal: Identification of target molecules which regulate autophagic survival in pancreatic cancer with the goal to identify novel drug targets.
Role: PI

EU Marie Curie Training fellowship Tooze (PI) April 2013-March 2015
PIEF-GA-2012-330396
„Functional analysis of SCOC and FEZ proteins in autophagy using mammalian cell models and zebrafish"
Goal: SCOC and FEZ1 were identified as novel autophagy regulatory proteins in the Tooze lab siGenome screen. This project was funded to determine how these proteins regulate autophagy in mammalian cells and to develop the zebrafish as a model for study og autophagy.
Role: PI

Cancer Research UK, UK Tooze (PI) Feb. 2012-Feb 2017
"Molecular mechanisms regulating mammalian autophagy"
Goal: Research program focused on the further understanding of the molecular regulation of autophagy in mammalian cells.
Role: PI